

## Commentary

### **What I Have and What I Do—The Role of Resource Loss and Gain Throughout Life**

Alexandra M. Freund\* and Michaela Riediger

*Max Planck Institute for Human Development and Education,  
Berlin, FRG*

Hobfoll (1989, 1998, this volume) has argued—and provided convincing empirical evidence in support of his argument—that loss of resources causes stress and that individuals are highly motivated to conserve their resources. The Conservation of Resources (COR) model also states that there is a basic asymmetry of resource gains and losses, in that resource gain has significantly less impact on a person's well-being than resource loss. In light of a stress and coping approach, this appears to be a valid standpoint. From a life-span developmental perspective, however, resource gain might be a more powerful explanatory and motivational variable than suggested by COR. In this paper, we will argue that striving for resource gain drives developmental changes for at least two-thirds of the life-span. Only in older adulthood, when resource losses threaten the maintenance of functioning,

---

\* Address for correspondence: Alexandra M. Freund, Max Planck Institute of Education and Human Development, Lentzeallee 94, 14195 Berlin, Germany. Email: Freund@mpib-berlin.mpg.de

might the motivation to prevent and counteract losses become increasingly important and finally outweigh tendencies to accumulate new resources (e.g. P. Baltes, 1997; Brandstädter & Wentura, 1995; Freund, Li, & P. Baltes, 1999; see also Hobfoll & Wells, 1998).

To better understand the effects of resource gains and losses on functioning, i.e. to understand *processes* that link resources and functioning, we find it helpful to delineate various functional aspects of resources. We distinguish between (1) resources that are finite (i.e. available in limited quantities) and become depleted through usage (e.g. money, time, social support) and (2) resources that enable the efficient use of finite resources (e.g. personality characteristics, motivational processes). Following an elaboration of this distinction, we will present a model of the efficient use of finite resources across the life-span, the model of selection, optimisation, and compensation (SOC; P. Baltes & Baltes, 1990). On the basis of the SOC model and taking a developmental perspective, we argue that investing resources in the service of resource gains is no less important than investing resources in the prevention and counteraction of losses.

### INTRODUCTORY REMARKS: AN EVOLUTIONARY PERSPECTIVE ON RESOURCES

From an evolutionary viewpoint, having as many resources as possible is of advantage because resources are essential for one's own survival (thus prolonging the time during which offspring can be produced), for reproductive success, and for the probability of survival of one's offspring (and, thereby, of one's own genes). Moreover, displaying resources should enhance one's chances to be considered as an attractive mate: the possession of resources can be taken to signal success, which, in turn, implies that the successful individual has good genetic material that, in the case of successful reproduction, will help one's own genes to survive. Furthermore, a mate's resources can also provide for the upbringing of offspring. There is some evidence supporting the view that men in wealth and power are more attractive for women and more likely to be picked as mates than less resourceful men (Buss, 1999).

Taking this perspective, then, it is easy to agree with Hobfoll's hypothesis that resources—and their conservation—are of prime and universal importance to humans (see also Hobfoll, 1998). The loss of resources that could have been spent on investing in reproduction (by displaying resources to enhance one's mate value or by investing them into the upbringing of offspring) poses a serious threat to the transmission of genes and needs to be avoided. Given that resources enhance one's mate value, however, persons also should profit greatly from *acquiring* as many resources as possible (see also Hobfoll & Wells, 1998). Shouldn't there be evolutionary pressure,

then, for the ability to acquire and the willingness to display resources? And, furthermore, shouldn't the positive effects of gaining and maintaining resources also be reflected in the association of resources to well-being?

Yet, research on subjective well-being supports Hobfoll's hypothesis that possessing many resources does not make people on average more happy than people with fewer resources (e.g. Diener, Suh, Lucas, & Smith, 1999). One possible explanation why the absolute quantity of resources is not very predictive of people's well-being is to argue that it is not the possession of a certain amount of resources that makes people happy (why would they strive for more, if they were content with what they have?) but resource *gain*. Similarly, possessing only very few resources does not seem to make people unhappy given that a certain level of resources ensuring survival is met (Diener et al., 1999). Instead, it is resource *loss* that makes people unhappy and causes stress (Hobfoll, this volume). The hypothesis that it is *change* in resources rather than the absolute amount of resources that makes people happy or unhappy is also consistent with models of hedonic adaptation (Frederick & Loewenstein, 1999) as well as with Hobfoll's COR model. For instance, even in cases of large gains in resources such as winning a lottery or in cases of severe losses such as accidents causing paraplegia, individuals seem to adapt astonishingly fast regarding their subjective well-being (Brickman, Coates, & Janoff-Bulman, 1978).

Another aspect contributing to the weak association of resources and well-being could be that people do not only vary with regard to the amount of resources they possess or gain but also with regard to how *efficiently* they use them. Whereas some people might be able to make a lot out of very little, others might be less skilled in using their resources efficiently. Before further elaborating this argument, let us next briefly address the question of how to define resources.

## THE NOTION OF RESOURCES

Hobfoll's definition of resources is based primarily on shared (individual and interindividual or cultural) positive evaluations (p. 339): "Resources have been defined as those objects, personal characteristics, conditions, or energies that are valued in their own right, or that are valued because they act as conduits to the achievement or protection of valued resources." Such a definition results in a broad range of things that are considered as resources, ranging from self-esteem, self-discipline, optimism, motivation to get things done, to adequate food, medical insurance, money, and necessary tools for work. As Hobfoll points out these things are valued positively by most people and are not merely idiosyncratic preferences. Despite their inter-subjectively shared positive evaluation, it remains unspecified in exactly what way these things are resources. Resources for what?

The notion of resources requires the specification of the tasks or demands they might help to achieve (see also Diener & Fujita, 1995). Hence, our working definition of resources is the following: Resources are actual or potential means for achieving one's goals. What kinds of assets constitute a resource can only be defined with regard to a specified goal. For instance, fertiliser can be considered as a resource when the goal is growing plants but not for the goal of buying a new house. Depending on the goals under consideration, these resources can be biological-genetic, social-cultural, or psychological in nature. The mere possession of goal-relevant means or resources, however, does not in and of itself bring about goal attainment. Hence, one interesting question when investigating the effect of resources is how they are *used* effectively.

Similarly, Navon (1984), addressing cognitive resources, suggested distinguishing between "commodities" and "alterants". In his definition, commodities refer to any internal input essential for cognitive processing that is available in finite quantities, and that can, at any point in time, be used for one purpose or by one user only. Applied to a broader context and extending the notion to internal and external resources, an example would be a specific \$10 bill. A \$10 bill can be seen as representing a commodity that can be spent at one point in time for only one purchase worth \$10. Alterants, on the other hand, denote psychological states that can simultaneously affect the efficiency of using different commodities. In our example, anxiety could affect both the decision on what I spend my \$10—invest it in a risky enterprise or buy something with a known value—and the success of negotiating with the salesperson.

Whereas "commodities" (e.g. money) are finite throughout the life-span, "alterants" (e.g. self-efficacy) are not. Moreover, alterants such as self-efficacy are not depleted through usage, although they might decrease as a response to repeated failure to perform up to personal or social standards. For instance, persons usually do not become less self-efficacious after having displayed a certain amount of self-efficacy when confronted with a specific task. On the contrary, as pointed out by Bandura (1996), self-efficacy is likely to *increase* after having mastered a particularly difficult task. In this sense, alterants such as self-efficacy can be neither "spent" nor "conserved". Hence, the importance of conservation of resources seems to apply primarily to resources that are finite and are depleted after usage (e.g. money, time, social support) but not so to resources that can be used simultaneously for a variety of purposes or processes and that are not depleted after usage (e.g. self-efficacy, self-esteem, personality traits).

Restricting the notion of conservation of resources to finite and depletable resources might help to disentangle resources and processes related to their usage more clearly. This, in turn, might represent a valuable future approach to integrating theory about what causes stress to occur and theory

addressing the question how people successfully overcome stressful situations. We consider a distinction between naturally finite resources and characteristics that influence the efficiency of using those finite resources to be very useful as it helps to more clearly address the question whether it is the *availability* of resources, the way of *using* these resources, or the interaction of both that impacts how successfully individuals manage their lives.

### A DEVELOPMENTAL PERSPECTIVE ON RESOURCE GAINS AND LOSSES

Above we argued that one reason for the weak association of resources and subjective well-being might be the fact that people do not only vary with respect to the amount of resources they possess but also with regard to how efficiently they use them. As we will elaborate in more detail below, P. Baltes (1997) has argued that there are systematic age-related differences in both the availability and the efficient use of resources across the life-span, with older people having access to fewer resources *and* being less efficient in using them. With increasing age, people may become more motivated to conserve their resources against losses and invest into the maintenance of functioning in the face of loss or decline (Staudinger, Marsiske, & Baltes, 1995).

Motivational preferences for gaining rather than conserving resources become evident when investigating personal goals. When participants (mostly college students) are asked to list their personal goals, they typically report at least three times as many goals that focus on gains (“approach goals”) than goals that focus on losses (“avoidance goals”; Elliot, Sheldon, & Church, 1997; Emmons, 1996). This finding favours the view that, for young adults, approach motivation is more salient than avoidance motivation. Moreover, the asymmetry of gains and losses that Hobfoll has shown to be present in stress-related responses is not reflected in stronger effects of loss-related over gain-related goals. A number of studies (e.g. Coats, Janoff-Bulman, & Alpert, 1996; Elliot et al., 1997; Emmons, 1996) have shown that approach goals are associated with a higher degree of self-efficacy and well-being whereas avoidance goals are related to negative emotions and distress. Focusing on gains rather than losses, then, appears to have important motivational and affective functions that might contribute to successful development.

On the basis of these arguments, we posit that from childhood throughout middle-age, individuals are primarily motivated to *gain* resources in order to optimise their development, and only in old age, people are more motivated to conserve their resources. Again, this view is consistent with COR theory: “COR theory begins with the assumption that *individuals strive to obtain, retain, and protect that which they value* [i.e. resources]” (Hobfoll & Wells,

1998, p. 122). The main difference of our perspective is that resource gain is given equal importance.

In the following section, we will present a perspective on life-span development that, like COR theory, stresses the importance of resources, namely the model of Selection, Optimisation, and Compensation (SOC model; M. Baltes & Carstensen, 1996, 1998; P. Baltes & Baltes, 1990; P. Baltes, 1997; Freund & P. Baltes, 2000b; Freund et al., 1999; Marsiske, Lang, Baltes, & Baltes, 1995). The SOC model integrates the two arguments we put forth in this paper: (1) It is helpful to distinguish between (a) resources that are finite at any given point in life and are depleted after usage and (b) processes that determine the efficiency of their usage. (2) At least for the first two-thirds of the life-span, investing resources in resource gain is no less important than investing resources in counteracting losses.

### ORCHESTRATING RESOURCE GAIN AND LOSS THROUGHOUT LIFE

The model of selection, optimisation, and compensation proposes that successful regulation of life-span development results from the interplay of three developmental regulatory processes—selection, optimisation, and compensation. The selection aspect addresses the fact that resources are finite at any given point in life so all goals cannot be pursued. Both optimisation and compensation refer to investment into resource accumulation (optimisation) or preventing or counteracting decline in functioning when loss in resources occurs (compensation). Given the limitation of resources, the SOC-model posits that the *selection* of domains of functioning (out of a pool of potential alternatives) on which to focus one's resources is one of the central processes of developmental regulation. Adequate goal selection requires developing and setting goals in domains for which resources are present or can be attained, and that match a person's needs and environmental demands (Freund, 1997). Stressing the importance of selection to manage resource limitation, Staudinger and Freund (1998) found that selecting few life-domains on which to focus was particularly adaptive for older people who were confronted with constraints in resources. Selection of domains on which to focus one's resources, however, also has costs because selecting domains implies that other alternative possibilities were not chosen. On the other hand, selection is one of the preconditions of the process of specialisation that is essential for development. It is only through specialisation that higher-order functioning can be achieved that, in turn, offers access to new resources. In the sense of specialisation, selection implies directionality of development.

With regard to processes of goal-pursuit, the differentiation of a gain versus a loss focus is addressed in the SOC model with the distinction

between optimisation and compensation (Freund et al., 1999). Whereas optimisation serves the growth aspect of development (gain in resources), compensation addresses how people maintain a given level of functioning in the face of loss and decline in resources (P. Baltes & Baltes, 1990).

Stressing the importance of a gain focus in goal-pursuit for successful development, the SOC model posits that people need to invest goal-relevant means in order to *optimise* their level of functioning. Neither goals nor resources alone bring about goal-attainment. Instead, the investment and efficient usage of resources into goals—and here we are back to our resource distinction—is crucial for achieving desired outcomes. For instance, possessing a piano, having access to a teacher, and having time (resources) plus wanting to become a pianist (goal) are not yet in themselves sufficient to actually become a pianist or even to learn how to play the piano in a passable way. Research on expertise and peak-performance, for instance, shows that successful task-performance depends on the amount of time invested into deliberate practice (e.g. Ericsson, Krampe, & Tesch-Römer, 1993). Time, one of the limited resources, needs to be spent on the acquisition of new goal-relevant skills (e.g. learning a new touch technique for the piano), on the refinement of skills (e.g. flexibility of fingers), their integration (e.g. practising fast scales with the new touch technique), and their automatisisation by repeated implementation. Here, motivational variables (such as the ones listed by Hobfoll, this volume, Table 1) play a central role for the efficiency with which the resources time and piano are used: sense of commitment, optimism, control-beliefs, self-efficacy, and the ability to delay gratification (see Freund & P. Baltes, 2000b, for a discussion of the role of these variables for optimisation).

Research on optimisation shows that, across adulthood, self-reported investment of resources into selected goals is related to higher levels of functioning (e.g. M. Baltes & Lang, 1997; Freund & P. Baltes, 1998, 2000a; Wiese, Freund, & P. Baltes, 2000). Investment rather than conservation of resources seems to contribute to higher levels of functioning and thus to successful development. Thus, when taking a long-term view such as a life-span developmental perspective, the investment of resources appears to be of prime importance for developmental progress and success.

This is not to deny the importance of losses in resources. Here, one central question of life-span development converging with COR theory is how people can maintain a given level of functioning when loss or decline in resources occurs. Again, the SOC model posits that the investment of (alternative or previously unused) resources—i.e. *compensation*—is needed to counteract such losses. Whereas in the case of optimisation, means are invested in the interest of goal-*achievement*, in the case of compensation, means are invested in the interest of *avoiding* a loss in functioning. As has been shown by Hobfoll, people are highly loss aversive and are

very motivated to avoid losses. However, compensation is costly because resources need to be invested to counteract losses (Schönpflug, 1998). Only when a certain amount of resources is still available that can be invested into compensation *and* the available resources can be used efficiently, is compensation a viable option (Freund et al., 1999; Hobfoll, 1989, this volume).

As mentioned above, P. Baltes (1997) described systematic age-related changes with regard to the availability and efficiency of resources. After a rapid gain trajectory of resources throughout childhood, adolescence, and young adulthood, losses in resources outweigh gains in old age. This negative trajectory is due to the fact that with advancing age depleted resources are less and less replenished and at the same time drawn upon more exhaustively. P. Baltes (1997) gives three reasons for this: (1) advantages of evolutionary selection decline across the life-span and particularly after childbearing age, (2) the need for culture increases across the life-span as the internal resources (e.g. physical strength, health) decrease, (3) the efficacy of culture decreases across the life-span and particularly in old age because older adults can make less use of supportive environmental conditions. Moreover, less cultural support is available in old age that, as a life stage, has only evolved fairly recently. Hence, it is both the availability of resources and the efficiency of their usage that decline in later adulthood.

With increasing age, then, people might be more motivated to conserve their resources against losses in order to preserve their functioning (Staudinger et al., 1995). In accordance with this view, Heckhausen (1998) found that younger adults strive primarily for gains whereas middle-aged and older adults report more goals related to the maintenance of functioning and the avoidance of losses. At the same time, Freund and P. Baltes (1998) showed that in very old age, although self-reported investment of resources into compensation for losses continues to predict positive functioning, on average compensatory efforts decline with age (see also Freund & P. Baltes, 2000a). Taken together, these findings underscore the importance of avoiding losses with increasing age but show that the restriction of resources might also be linked to limited capacity for compensation.

When losses in resources are pervasive, thus making compensation difficult or impossible, individuals can re-evaluate their goals and restructure their goal hierarchy, focusing on goals for which resources are still available. This process, in the SOC model labelled loss-based selection, allows one to respond adaptively to severe or permanent losses in resources without further depleting the remaining resources by persisting in costly compensatory efforts (see also Brandtstädter & Wentura, 1995; Heckhausen & Schulz, 1995). At the same time, loss-based selection provides action-guiding goals that direct and focus the remaining resources on achievable goals. In this way, a gain-orientation can again come into play that might help



to achieve higher levels of functioning in the selected goals and access to new resources.

### SUMMARY

In this paper we have taken a life-span developmental perspective to illuminate the role of gains and losses in resources for development. Taking this perspective, we agree with Hobfoll (this volume) that the loss of resources is detrimental for individuals and that they are highly motivated to conserve their resources. In contrast to COR theory, however, a developmental perspective also stresses the importance of resource gains. Striving for resource gains can be viewed as a driving force for development throughout the life-span. In old age, however, when losses in resources become more predominant and might outweigh gains, the motivation to prevent and counteract losses might become increasingly important.

Taking a process-oriented approach to understanding the effects of gains and losses of resources on positive functioning, we propose to distinguish between two different, interacting kinds of resources: (1) What I have (i.e. resources that are finite and depleted after usage) and (2) What I do (i.e. characteristics that refer to the efficiency or usage of a given pool of resources of the first kind). The SOC model posits that there are three central *processes* ("what I do") of successfully managing the amount of available resources ("what I have"): selection, optimisation, and compensation. Moreover, the SOC model suggests that for at least two-thirds of the life-span, processes related to resource gains (optimisation) are at least as important for successful life-management as processes related to counteracting losses (compensation).

### REFERENCES

- Baltes, M.M., & Carstensen, L.L. (1996). The process of successful ageing. *Ageing and Society*, 16, 397–422.
- Baltes, M.M., & Carstensen, L.L. (1998). Social psychological theories and their applications to aging: From individual to collective selective optimization with compensation. In V.L. Bengtson & K.W. Schaie (Eds.), *Handbook of theories of aging*. New York: Springer.
- Baltes, M.M., & Lang, F.R. (1997). Everyday functioning and successful aging: The impact of resources. *Psychology and Aging*, 12, 433–443.
- Baltes, P.B. (1997). On the incomplete architecture of human ontogeny: Selection, optimization, and compensation as foundation of developmental theory. *American Psychologist*, 52, 366–380.
- Baltes, P.B., & Baltes, M.M. (1990). Psychological perspectives on successful aging: The model of selective optimization with compensation. In P.B. Baltes & M.M. Baltes (Eds.), *Successful aging: Perspectives from the behavioral sciences* (pp. 1–34). New York: Cambridge University Press.

- Bandura, A. (1996). *Self-efficacy: The exercise of control*. New York: Freeman.
- Brandtstädter, J., & Wentura, D. (1995). Adjustment to shifting possibility frontiers in later life: Compensatory adaptive modes. In R.A. Dixon & L. Bäckman (Eds.), *Psychological compensation: Managing losses and promoting gains* (pp. 83–106). Hillsdale, NJ: Erlbaum.
- Brickman, P., Coates, D., & Janoff-Bulman, R. (1978). Lottery winners and accident victims: Is happiness relative? *Journal of Personality and Social Psychology*, *37*, 917–927.
- Buss, D.M. (1999). *Evolutionary psychology. The new science of the mind*. Boston: Allyn & Bacon.
- Coats, E.J., Janoff-Bulman, R., & Alpert, N. (1996). Approach versus avoidance goals: Differences in self-evaluation and well-being. *Personality and Social Psychology Bulletin*, *22*, 1057–1067.
- Diener, E., & Fujita, F. (1995). Resources, personal strivings, and subjective well-being: A nomothetic and ideographic approach. *Journal of Personality and Social Psychology*, *68*, 926–936.
- Diener, E., Suh, E.M., Lucas, R.E., & Smith, H.L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, *125*, 276–302.
- Elliot, A.J., Sheldon, K.M., & Church, M.A. (1997). Avoidance personal goals and subjective well-being. *Personality and Social Psychological Bulletin*, *23*, 915–927.
- Emmons, R.A. (1996). Striving and feeling. Personal goals and subjective well-being. In P.M. Gollwitzer & J.A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 313–337). New York: Guilford Press.
- Ericsson, K.A., Krampe, R.T., & Tesch-Römer, C. (1993). The role of deliberate practice in the acquisition of real-life expertise. *Psychological Review*, *100*, 363–406.
- Frederick, S., & Loewenstein, G. (1999). Hedonic adaptation. In D. Kahnemann, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundation of hedonic psychology* (pp. 302–329). New York: Russell Sage Foundation.
- Freund, A.M. (1997). Individuating age salience: A psychological perspective on the salience of age in the life course. *Human Development*, *40*, 287–292.
- Freund, A.M., & Baltes, P.B. (1998). Selection, optimization, and compensation as strategies of life-management: Correlations with subjective indicators of successful aging. *Psychology & Aging*, *13*, 531–543.
- Freund, A.M., & Baltes, P.B. (2000a). Life-management strategies of selection, optimization, and compensation: Measurement by self-report and construct validity. Paper submitted for publication.
- Freund, A.M., & Baltes, P.B. (2000b). The orchestration of selection, optimization, and compensation: An action-theoretical conceptualization of a theory of developmental regulation. In W.J. Perrig & A. Grob (Eds.), *Control of human behaviour, mental processes, and consciousness* (pp. 35–58). Mahwah, NJ: Erlbaum.
- Freund, A.M., Li, Z.H., & Baltes, P.B. (1999). The role of selection, optimization, and compensation in successful aging. In J. Brandtstädter & R.M. Lerner (Eds.), *Action and self-development: Theory and research through the life span* (pp. 401–434). Thousand Oaks: Sage.
- Heckhausen, J. (1998). *Developmental regulation in adulthood: Age-normative and socio-structural constraints as adaptive challenges*. New York: Cambridge University Press.

- Heckhausen, J., & Schulz, R. (1995). A life-span theory of control. *Psychological Review*, *102*, 284–304.
- Hobfoll, S.E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, *44*, 513–524.
- Hobfoll, S.E. (1998). *Stress, culture, and community: The psychology and philosophy of stress*. New York: Plenum.
- Hobfoll, S.E., & Wells, J.D. (1998). Conservation of resources, stress, and aging. Why do some slide and some spring? In J. Lomranz (Ed.), *Handbook of aging and mental health: An integrative approach* (pp. 121–134). New York: Plenum.
- Hobfoll, S.E. (this volume). The influence of culture, community, and the nested-self in the stress process: Advancing Conservation of Resources theory. *Applied Psychology: An International Review*.
- Marsiske, M., Lang, F.R., Baltes, P.B., & Baltes, M.M. (1995). Selective optimization with compensation: Life-span perspectives on successful human development. In R.A. Dixon & L. Bäckman (Eds.), *Compensating for psychological deficits and declines: Managing losses and promoting gains* (pp. 35–79). Mahwah, NJ: Erlbaum.
- Navon, D. (1984). Resources: A theoretical soup stone? *Psychological Review*, *91*, 216–234.
- Schönplflug, W. (1998). Improving efficiency of action control through technical and social resources. In M. Kofta, G. Weary, & G. Sedek (Eds.), *Personal control in action. Cognitive and motivational mechanisms* (pp. 299–314). New York: Plenum Press.
- Staudinger, U.M., & Freund, A.M. (1998). Krank und “arm” im hohen Alter und trotzdem guten Mutes? Untersuchungen im Rahmen eines Modells psychologischer Widerstandsfähigkeit [Sick and “poor” in old age but still in good spirits? Investigations within the framework of psychological resilience]. *Zeitschrift für Klinische Psychologie*, *27*, 78–85.
- Staudinger, U.M., Marsiske, M., & Baltes, P.B. (1995). Resilience and reserve capacity in later adulthood: Potentials and limits of development across the life span. In D. Cicchetti & D. Cohen (Eds.), *Developmental psychopathology* (Vol. 2, pp. 801–847). New York: Wiley.
- Wiese, B.S., Freund, A.M., & Baltes, P.B. (2000). Selection, optimization, and compensation: An action-related approach to work and partnership. *Journal of Vocational Behavior*, *57*, 273–300.

- Wells, J., Hobfoll, S.E., & Lavin, J. (1997). The effects of resource loss, resource gain and communal coping on anger during pregnancy among women with multiple roles. *Psychology of Women Quarterly*, *21*, 645–662.
- Wells, J., Hobfoll, S.E., & Lavin, J. (1999). When it rains, it pours: The greater impact of resource loss compared to gain on psychological distress. *Personality and Social Psychology Bulletin*, *25*, 1172–1182.
- Westman, M., & Eden, D. (1997). Effects of a respite from work on burnout: Vacation relief and fade-out. *Journal of Applied Psychology*, *82*, 516–527.
- Westman, M., & Etzion, D. (1995). Crossover of stress, strain, and resources from one spouse to another. *Journal of Organizational Behavior*, *16*, 169–181.
- Wright, T.A., & Cropanzano, R. (1998). Emotional exhaustion as a predictor of job performance and voluntary turnover. *Journal of Applied Psychology*, *83*, 486–493.

## Commentary

### What I Have and What I Do—The Role of Resource Loss and Gain Throughout Life

Alexandra M. Freund\* and Michaela Riediger

*Max Planck Institute for Human Development and Education,  
Berlin, FRG*

Hobfoll (1989, 1998, this volume) has argued—and provided convincing empirical evidence in support of his argument—that loss of resources causes stress and that individuals are highly motivated to conserve their resources. The Conservation of Resources (COR) model also states that there is a basic asymmetry of resource gains and losses, in that resource gain has significantly less impact on a person's well-being than resource loss. In light of a stress and coping approach, this appears to be a valid standpoint. From a life-span developmental perspective, however, resource gain might be a more powerful explanatory and motivational variable than suggested by COR. In this paper, we will argue that striving for resource gain drives developmental changes for at least two-thirds of the life-span. Only in older adulthood, when resource losses threaten the maintenance of functioning,

---

\* Address for correspondence: Alexandra M. Freund, Max Planck Institute of Education and Human Development, Lentzeallee 94, 14195 Berlin, Germany. Email: Freund@mpib-berlin.mpg.de

might the motivation to prevent and counteract losses become increasingly important and finally outweigh tendencies to accumulate new resources (e.g. P. Baltes, 1997; Brandstädter & Wentura, 1995; Freund, Li, & P. Baltes, 1999; see also Hobfoll & Wells, 1998).

To better understand the effects of resource gains and losses on functioning, i.e. to understand *processes* that link resources and functioning, we find it helpful to delineate various functional aspects of resources. We distinguish between (1) resources that are finite (i.e. available in limited quantities) and become depleted through usage (e.g. money, time, social support) and (2) resources that enable the efficient use of finite resources (e.g. personality characteristics, motivational processes). Following an elaboration of this distinction, we will present a model of the efficient use of finite resources across the life-span, the model of selection, optimisation, and compensation (SOC; P. Baltes & Baltes, 1990). On the basis of the SOC model and taking a developmental perspective, we argue that investing resources in the service of resource gains is no less important than investing resources in the prevention and counteraction of losses.

### INTRODUCTORY REMARKS: AN EVOLUTIONARY PERSPECTIVE ON RESOURCES

From an evolutionary viewpoint, having as many resources as possible is of advantage because resources are essential for one's own survival (thus prolonging the time during which offspring can be produced), for reproductive success, and for the probability of survival of one's offspring (and, thereby, of one's own genes). Moreover, displaying resources should enhance one's chances to be considered as an attractive mate: the possession of resources can be taken to signal success, which, in turn, implies that the successful individual has good genetic material that, in the case of successful reproduction, will help one's own genes to survive. Furthermore, a mate's resources can also provide for the upbringing of offspring. There is some evidence supporting the view that men in wealth and power are more attractive for women and more likely to be picked as mates than less resourceful men (Buss, 1999).

Taking this perspective, then, it is easy to agree with Hobfoll's hypothesis that resources—and their conservation—are of prime and universal importance to humans (see also Hobfoll, 1998). The loss of resources that could have been spent on investing in reproduction (by displaying resources to enhance one's mate value or by investing them into the upbringing of offspring) poses a serious threat to the transmission of genes and needs to be avoided. Given that resources enhance one's mate value, however, persons also should profit greatly from *acquiring* as many resources as possible (see also Hobfoll & Wells, 1998). Shouldn't there be evolutionary pressure,

then, for the ability to acquire and the willingness to display resources? And, furthermore, shouldn't the positive effects of gaining and maintaining resources also be reflected in the association of resources to well-being?

Yet, research on subjective well-being supports Hobfoll's hypothesis that possessing many resources does not make people on average more happy than people with fewer resources (e.g. Diener, Suh, Lucas, & Smith, 1999). One possible explanation why the absolute quantity of resources is not very predictive of people's well-being is to argue that it is not the possession of a certain amount of resources that makes people happy (why would they strive for more, if they were content with what they have?) but resource *gain*. Similarly, possessing only very few resources does not seem to make people unhappy given that a certain level of resources ensuring survival is met (Diener et al., 1999). Instead, it is resource *loss* that makes people unhappy and causes stress (Hobfoll, this volume). The hypothesis that it is *change* in resources rather than the absolute amount of resources that makes people happy or unhappy is also consistent with models of hedonic adaptation (Frederick & Loewenstein, 1999) as well as with Hobfoll's COR model. For instance, even in cases of large gains in resources such as winning a lottery or in cases of severe losses such as accidents causing paraplegia, individuals seem to adapt astonishingly fast regarding their subjective well-being (Brickman, Coates, & Janoff-Bulman, 1978).

Another aspect contributing to the weak association of resources and well-being could be that people do not only vary with regard to the amount of resources they possess or gain but also with regard to how *efficiently* they use them. Whereas some people might be able to make a lot out of very little, others might be less skilled in using their resources efficiently. Before further elaborating this argument, let us next briefly address the question of how to define resources.

## THE NOTION OF RESOURCES

Hobfoll's definition of resources is based primarily on shared (individual and interindividual or cultural) positive evaluations (p. 339): "Resources have been defined as those objects, personal characteristics, conditions, or energies that are valued in their own right, or that are valued because they act as conduits to the achievement or protection of valued resources." Such a definition results in a broad range of things that are considered as resources, ranging from self-esteem, self-discipline, optimism, motivation to get things done, to adequate food, medical insurance, money, and necessary tools for work. As Hobfoll points out these things are valued positively by most people and are not merely idiosyncratic preferences. Despite their inter-subjectively shared positive evaluation, it remains unspecified in exactly what way these things are resources. Resources for what?

The notion of resources requires the specification of the tasks or demands they might help to achieve (see also Diener & Fujita, 1995). Hence, our working definition of resources is the following: Resources are actual or potential means for achieving one's goals. What kinds of assets constitute a resource can only be defined with regard to a specified goal. For instance, fertiliser can be considered as a resource when the goal is growing plants but not for the goal of buying a new house. Depending on the goals under consideration, these resources can be biological-genetic, social-cultural, or psychological in nature. The mere possession of goal-relevant means or resources, however, does not in and of itself bring about goal attainment. Hence, one interesting question when investigating the effect of resources is how they are *used* effectively.

Similarly, Navon (1984), addressing cognitive resources, suggested distinguishing between "commodities" and "alterants". In his definition, commodities refer to any internal input essential for cognitive processing that is available in finite quantities, and that can, at any point in time, be used for one purpose or by one user only. Applied to a broader context and extending the notion to internal and external resources, an example would be a specific \$10 bill. A \$10 bill can be seen as representing a commodity that can be spent at one point in time for only one purchase worth \$10. Alterants, on the other hand, denote psychological states that can simultaneously affect the efficiency of using different commodities. In our example, anxiety could affect both the decision on what I spend my \$10—invest it in a risky enterprise or buy something with a known value—and the success of negotiating with the salesperson.

Whereas "commodities" (e.g. money) are finite throughout the life-span, "alterants" (e.g. self-efficacy) are not. Moreover, alterants such as self-efficacy are not depleted through usage, although they might decrease as a response to repeated failure to perform up to personal or social standards. For instance, persons usually do not become less self-efficacious after having displayed a certain amount of self-efficacy when confronted with a specific task. On the contrary, as pointed out by Bandura (1996), self-efficacy is likely to *increase* after having mastered a particularly difficult task. In this sense, alterants such as self-efficacy can be neither "spent" nor "conserved". Hence, the importance of conservation of resources seems to apply primarily to resources that are finite and are depleted after usage (e.g. money, time, social support) but not so to resources that can be used simultaneously for a variety of purposes or processes and that are not depleted after usage (e.g. self-efficacy, self-esteem, personality traits).

Restricting the notion of conservation of resources to finite and depletable resources might help to disentangle resources and processes related to their usage more clearly. This, in turn, might represent a valuable future approach to integrating theory about what causes stress to occur and theory

addressing the question how people successfully overcome stressful situations. We consider a distinction between naturally finite resources and characteristics that influence the efficiency of using those finite resources to be very useful as it helps to more clearly address the question whether it is the *availability* of resources, the way of *using* these resources, or the interaction of both that impacts how successfully individuals manage their lives.

### A DEVELOPMENTAL PERSPECTIVE ON RESOURCE GAINS AND LOSSES

Above we argued that one reason for the weak association of resources and subjective well-being might be the fact that people do not only vary with respect to the amount of resources they possess but also with regard to how efficiently they use them. As we will elaborate in more detail below, P. Baltes (1997) has argued that there are systematic age-related differences in both the availability and the efficient use of resources across the life-span, with older people having access to fewer resources *and* being less efficient in using them. With increasing age, people may become more motivated to conserve their resources against losses and invest into the maintenance of functioning in the face of loss or decline (Staudinger, Marsiske, & Baltes, 1995).

Motivational preferences for gaining rather than conserving resources become evident when investigating personal goals. When participants (mostly college students) are asked to list their personal goals, they typically report at least three times as many goals that focus on gains ("approach goals") than goals that focus on losses ("avoidance goals"; Elliot, Sheldon, & Church, 1997; Emmons, 1996). This finding favours the view that, for young adults, approach motivation is more salient than avoidance motivation. Moreover, the asymmetry of gains and losses that Hobfoll has shown to be present in stress-related responses is not reflected in stronger effects of loss-related over gain-related goals. A number of studies (e.g. Coats, Janoff-Bulman, & Alpert, 1996; Elliot et al., 1997; Emmons, 1996) have shown that approach goals are associated with a higher degree of self-efficacy and well-being whereas avoidance goals are related to negative emotions and distress. Focusing on gains rather than losses, then, appears to have important motivational and affective functions that might contribute to successful development.

On the basis of these arguments, we posit that from childhood throughout middle-age, individuals are primarily motivated to *gain* resources in order to optimise their development, and only in old age, people are more motivated to conserve their resources. Again, this view is consistent with COR theory: "COR theory begins with the assumption that *individuals strive to obtain, retain, and protect that which they value* [i.e. resources]" (Hobfoll & Wells,



1998, p. 122). The main difference of our perspective is that resource gain is given equal importance.

In the following section, we will present a perspective on life-span development that, like COR theory, stresses the importance of resources, namely the model of Selection, Optimisation, and Compensation (SOC model; M. Baltes & Carstensen, 1996, 1998; P. Baltes & Baltes, 1990; P. Baltes, 1997; Freund & P. Baltes, 2000b; Freund et al., 1999; Marsiske, Lang, Baltes, & Baltes, 1995). The SOC model integrates the two arguments we put forth in this paper: (1) It is helpful to distinguish between (a) resources that are finite at any given point in life and are depleted after usage and (b) processes that determine the efficiency of their usage. (2) At least for the first two-thirds of the life-span, investing resources in resource gain is no less important than investing resources in counteracting losses.

### ORCHESTRATING RESOURCE GAIN AND LOSS THROUGHOUT LIFE

The model of selection, optimisation, and compensation proposes that successful regulation of life-span development results from the interplay of three developmental regulatory processes—selection, optimisation, and compensation. The selection aspect addresses the fact that resources are finite at any given point in life so all goals cannot be pursued. Both optimisation and compensation refer to investment into resource accumulation (optimisation) or preventing or counteracting decline in functioning when loss in resources occurs (compensation). Given the limitation of resources, the SOC-model posits that the *selection* of domains of functioning (out of a pool of potential alternatives) on which to focus one's resources is one of the central processes of developmental regulation. Adequate goal selection requires developing and setting goals in domains for which resources are present or can be attained, and that match a person's needs and environmental demands (Freund, 1997). Stressing the importance of selection to manage resource limitation, Staudinger and Freund (1998) found that selecting few life-domains on which to focus was particularly adaptive for older people who were confronted with constraints in resources. Selection of domains on which to focus one's resources, however, also has costs because selecting domains implies that other alternative possibilities were not chosen. On the other hand, selection is one of the preconditions of the process of specialisation that is essential for development. It is only through specialisation that higher-order functioning can be achieved that, in turn, offers access to new resources. In the sense of specialisation, selection implies directionality of development.

With regard to processes of goal-pursuit, the differentiation of a gain versus a loss focus is addressed in the SOC model with the distinction

between optimisation and compensation (Freund et al., 1999). Whereas optimisation serves the growth aspect of development (gain in resources), compensation addresses how people maintain a given level of functioning in the face of loss and decline in resources (P. Baltes & Baltes, 1990).

Stressing the importance of a gain focus in goal-pursuit for successful development, the SOC model posits that people need to invest goal-relevant means in order to *optimise* their level of functioning. Neither goals nor resources alone bring about goal-attainment. Instead, the investment and efficient usage of resources into goals—and here we are back to our resource distinction—is crucial for achieving desired outcomes. For instance, possessing a piano, having access to a teacher, and having time (resources) plus wanting to become a pianist (goal) are not yet in themselves sufficient to actually become a pianist or even to learn how to play the piano in a passable way. Research on expertise and peak-performance, for instance, shows that successful task-performance depends on the amount of time invested into deliberate practice (e.g. Ericsson, Krampe, & Tesch-Römer, 1993). Time, one of the limited resources, needs to be spent on the acquisition of new goal-relevant skills (e.g. learning a new touch technique for the piano), on the refinement of skills (e.g. flexibility of fingers), their integration (e.g. practising fast scales with the new touch technique), and their automatisisation by repeated implementation. Here, motivational variables (such as the ones listed by Hobfoll, this volume, Table 1) play a central role for the efficiency with which the resources time and piano are used: sense of commitment, optimism, control-beliefs, self-efficacy, and the ability to delay gratification (see Freund & P. Baltes, 2000b, for a discussion of the role of these variables for optimisation).

Research on optimisation shows that, across adulthood, self-reported investment of resources into selected goals is related to higher levels of functioning (e.g. M. Baltes & Lang, 1997; Freund & P. Baltes, 1998, 2000a; Wiese, Freund, & P. Baltes, 2000). Investment rather than conservation of resources seems to contribute to higher levels of functioning and thus to successful development. Thus, when taking a long-term view such as a life-span developmental perspective, the investment of resources appears to be of prime importance for developmental progress and success.

This is not to deny the importance of losses in resources. Here, one central question of life-span development converging with COR theory is how people can maintain a given level of functioning when loss or decline in resources occurs. Again, the SOC model posits that the investment of (alternative or previously unused) resources—i.e. *compensation*—is needed to counteract such losses. Whereas in the case of optimisation, means are invested in the interest of goal-*achievement*, in the case of compensation, means are invested in the interest of *avoiding* a loss in functioning. As has been shown by Hobfoll, people are highly loss aversive and are

very motivated to avoid losses. However, compensation is costly because resources need to be invested to counteract losses (Schönpflug, 1998). Only when a certain amount of resources is still available that can be invested into compensation *and* the available resources can be used efficiently, is compensation a viable option (Freund et al., 1999; Hobfoll, 1989, this volume).

As mentioned above, P. Baltes (1997) described systematic age-related changes with regard to the availability and efficiency of resources. After a rapid gain trajectory of resources throughout childhood, adolescence, and young adulthood, losses in resources outweigh gains in old age. This negative trajectory is due to the fact that with advancing age depleted resources are less and less replenished and at the same time drawn upon more exhaustively. P. Baltes (1997) gives three reasons for this: (1) advantages of evolutionary selection decline across the life-span and particularly after childbearing age, (2) the need for culture increases across the life-span as the internal resources (e.g. physical strength, health) decrease, (3) the efficacy of culture decreases across the life-span and particularly in old age because older adults can make less use of supportive environmental conditions. Moreover, less cultural support is available in old age that, as a life stage, has only evolved fairly recently. Hence, it is both the availability of resources and the efficiency of their usage that decline in later adulthood.

With increasing age, then, people might be more motivated to conserve their resources against losses in order to preserve their functioning (Staudinger et al., 1995). In accordance with this view, Heckhausen (1998) found that younger adults strive primarily for gains whereas middle-aged and older adults report more goals related to the maintenance of functioning and the avoidance of losses. At the same time, Freund and P. Baltes (1998) showed that in very old age, although self-reported investment of resources into compensation for losses continues to predict positive functioning, on average compensatory efforts decline with age (see also Freund & P. Baltes, 2000a). Taken together, these findings underscore the importance of avoiding losses with increasing age but show that the restriction of resources might also be linked to limited capacity for compensation.

When losses in resources are pervasive, thus making compensation difficult or impossible, individuals can re-evaluate their goals and restructure their goal hierarchy, focusing on goals for which resources are still available. This process, in the SOC model labelled loss-based selection, allows one to respond adaptively to severe or permanent losses in resources without further depleting the remaining resources by persisting in costly compensatory efforts (see also Brandtstädter & Wentura, 1995; Heckhausen & Schulz, 1995). At the same time, loss-based selection provides action-guiding goals that direct and focus the remaining resources on achievable goals. In this way, a gain-orientation can again come into play that might help

to achieve higher levels of functioning in the selected goals and access to new resources.

### SUMMARY

In this paper we have taken a life-span developmental perspective to illuminate the role of gains and losses in resources for development. Taking this perspective, we agree with Hobfoll (this volume) that the loss of resources is detrimental for individuals and that they are highly motivated to conserve their resources. In contrast to COR theory, however, a developmental perspective also stresses the importance of resource gains. Striving for resource gains can be viewed as a driving force for development throughout the life-span. In old age, however, when losses in resources become more predominant and might outweigh gains, the motivation to prevent and counteract losses might become increasingly important.

Taking a process-oriented approach to understanding the effects of gains and losses of resources on positive functioning, we propose to distinguish between two different, interacting kinds of resources: (1) What I have (i.e. resources that are finite and depleted after usage) and (2) What I do (i.e. characteristics that refer to the efficiency or usage of a given pool of resources of the first kind). The SOC model posits that there are three central *processes* ("what I do") of successfully managing the amount of available resources ("what I have"): selection, optimisation, and compensation. Moreover, the SOC model suggests that for at least two-thirds of the life-span, processes related to resource gains (optimisation) are at least as important for successful life-management as processes related to counteracting losses (compensation).

### REFERENCES

- Baltes, M.M., & Carstensen, L.L. (1996). The process of successful ageing. *Ageing and Society*, 16, 397–422.
- Baltes, M.M., & Carstensen, L.L. (1998). Social psychological theories and their applications to aging: From individual to collective selective optimization with compensation. In V.L. Bengtson & K.W. Schaie (Eds.), *Handbook of theories of aging*. New York: Springer.
- Baltes, M.M., & Lang, F.R. (1997). Everyday functioning and successful aging: The impact of resources. *Psychology and Aging*, 12, 433–443.
- Baltes, P.B. (1997). On the incomplete architecture of human ontogeny: Selection, optimization, and compensation as foundation of developmental theory. *American Psychologist*, 52, 366–380.
- Baltes, P.B., & Baltes, M.M. (1990). Psychological perspectives on successful aging: The model of selective optimization with compensation. In P.B. Baltes & M.M. Baltes (Eds.), *Successful aging: Perspectives from the behavioral sciences* (pp. 1–34). New York: Cambridge University Press.

- Bandura, A. (1996). *Self-efficacy: The exercise of control*. New York: Freeman.
- Brandtstädter, J., & Wentura, D. (1995). Adjustment to shifting possibility frontiers in later life: Compensatory adaptive modes. In R.A. Dixon & L. Bäckman (Eds.), *Psychological compensation: Managing losses and promoting gains* (pp. 83–106). Hillsdale, NJ: Erlbaum.
- Brickman, P., Coates, D., & Janoff-Bulman, R. (1978). Lottery winners and accident victims: Is happiness relative? *Journal of Personality and Social Psychology*, *37*, 917–927.
- Buss, D.M. (1999). *Evolutionary psychology. The new science of the mind*. Boston: Allyn & Bacon.
- Coats, E.J., Janoff-Bulman, R., & Alpert, N. (1996). Approach versus avoidance goals: Differences in self-evaluation and well-being. *Personality and Social Psychology Bulletin*, *22*, 1057–1067.
- Diener, E., & Fujita, F. (1995). Resources, personal strivings, and subjective well-being: A nomothetic and ideographic approach. *Journal of Personality and Social Psychology*, *68*, 926–936.
- Diener, E., Suh, E.M., Lucas, R.E., & Smith, H.L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, *125*, 276–302.
- Elliot, A.J., Sheldon, K.M., & Church, M.A. (1997). Avoidance personal goals and subjective well-being. *Personality and Social Psychological Bulletin*, *23*, 915–927.
- Emmons, R.A. (1996). Striving and feeling. Personal goals and subjective well-being. In P.M. Gollwitzer & J.A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 313–337). New York: Guilford Press.
- Ericsson, K.A., Krampe, R.T., & Tesch-Römer, C. (1993). The role of deliberate practice in the acquisition of real-life expertise. *Psychological Review*, *100*, 363–406.
- Frederick, S., & Loewenstein, G. (1999). Hedonic adaptation. In D. Kahnemann, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundation of hedonic psychology* (pp. 302–329). New York: Russell Sage Foundation.
- Freund, A.M. (1997). Individuating age salience: A psychological perspective on the salience of age in the life course. *Human Development*, *40*, 287–292.
- Freund, A.M., & Baltes, P.B. (1998). Selection, optimization, and compensation as strategies of life-management: Correlations with subjective indicators of successful aging. *Psychology & Aging*, *13*, 531–543.
- Freund, A.M., & Baltes, P.B. (2000a). Life-management strategies of selection, optimization, and compensation: Measurement by self-report and construct validity. Paper submitted for publication.
- Freund, A.M., & Baltes, P.B. (2000b). The orchestration of selection, optimization, and compensation: An action-theoretical conceptualization of a theory of developmental regulation. In W.J. Perrig & A. Grob (Eds.), *Control of human behaviour, mental processes, and consciousness* (pp. 35–58). Mahwah, NJ: Erlbaum.
- Freund, A.M., Li, Z.H., & Baltes, P.B. (1999). The role of selection, optimization, and compensation in successful aging. In J. Brandtstädter & R.M. Lerner (Eds.), *Action and self-development: Theory and research through the life span* (pp. 401–434). Thousand Oaks: Sage.
- Heckhausen, J. (1998). *Developmental regulation in adulthood: Age-normative and socio-structural constraints as adaptive challenges*. New York: Cambridge University Press.

- Heckhausen, J., & Schulz, R. (1995). A life-span theory of control. *Psychological Review*, *102*, 284–304.
- Hobfoll, S.E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, *44*, 513–524.
- Hobfoll, S.E. (1998). *Stress, culture, and community: The psychology and philosophy of stress*. New York: Plenum.
- Hobfoll, S.E., & Wells, J.D. (1998). Conservation of resources, stress, and aging. Why do some slide and some spring? In J. Lomranz (Ed.), *Handbook of aging and mental health: An integrative approach* (pp. 121–134). New York: Plenum.
- Hobfoll, S.E. (this volume). The influence of culture, community, and the nested-self in the stress process: Advancing Conservation of Resources theory. *Applied Psychology: An International Review*.
- Marsiske, M., Lang, F.R., Baltes, P.B., & Baltes, M.M. (1995). Selective optimization with compensation: Life-span perspectives on successful human development. In R.A. Dixon & L. Bäckman (Eds.), *Compensating for psychological deficits and declines: Managing losses and promoting gains* (pp. 35–79). Mahwah, NJ: Erlbaum.
- Navon, D. (1984). Resources: A theoretical soup stone? *Psychological Review*, *91*, 216–234.
- Schönplflug, W. (1998). Improving efficiency of action control through technical and social resources. In M. Kofta, G. Weary, & G. Sedek (Eds.), *Personal control in action. Cognitive and motivational mechanisms* (pp. 299–314). New York: Plenum Press.
- Staudinger, U.M., & Freund, A.M. (1998). Krank und “arm” im hohen Alter und trotzdem guten Mutes? Untersuchungen im Rahmen eines Modells psychologischer Widerstandsfähigkeit [Sick and “poor” in old age but still in good spirits? Investigations within the framework of psychological resilience]. *Zeitschrift für Klinische Psychologie*, *27*, 78–85.
- Staudinger, U.M., Marsiske, M., & Baltes, P.B. (1995). Resilience and reserve capacity in later adulthood: Potentials and limits of development across the life span. In D. Cicchetti & D. Cohen (Eds.), *Developmental psychopathology* (Vol. 2, pp. 801–847). New York: Wiley.
- Wiese, B.S., Freund, A.M., & Baltes, P.B. (2000). Selection, optimization, and compensation: An action-related approach to work and partnership. *Journal of Vocational Behavior*, *57*, 273–300.

## **Conservation of Resources Theory (COR): Little More Than Words Masquerading as a New Theory**

Richard S. Lazarus\*

*University of California at Berkeley, USA*

I have known about Hobfoll's effort to promote COR as an antidote to my appraisal-centered approach to psychological stress since 1989. He continues in this vein in Hobfoll (1998) and in this target article. In his writings, he constantly denigrates a subjective approach in favor of so-called objective influences, though he obviously is ambivalent about this in that he backtracks from this position by conceding that appraisal is the most successful proximal predictor of stress reactions.

I have not hitherto thought it useful to make a rejoinder to his critiques of my appraisal theory until just recently (Lazarus, in press) where I made a brief statement about it as an example of residual behaviorism. My chapter, which appears in a book about appraisal, harks back to my ideas in the early 1950s and brings them up to date. My early views about stress and coping were formalised first in Lazarus (1966), elaborated in Lazarus and Folkman (1984), and further refined and expanded to the emotions in later books (e.g. Lazarus, 1991, 1998, 1999; and Lazarus & Lazarus, 1994).

When the substance of Hobfoll's critique of appraisal theory is examined closely, it adds little or nothing to what I, and many others, have been saying for a long time, and what research has revealed (Lazarus, 1999). Given his persistence in pursuing the same arguments, it now seems appropriate for me to indicate why I believe that Hobfoll's viewpoint is fundamentally unsound and fails to advance us beyond what we know. I need also to protect myself against distortions of my position.

Given that few of us these days can keep up with the large volume of publications on the same or similar topics, doing this effectively is especially important. What is written is distributed in so many different journals and books that it is difficult to examine all or even most of it with care.

---

\* Address for correspondence: Department of Psychology, University of California, Berkeley, California 94720-1650, USA.

Increasingly, most of us skim what we read and are at risk of accepting what is said without thinking it through.

I don't wish to be unkind, but the title of my commentary is designed to suggest that Hobfoll is playing word games and is often inconsistent. There is nothing new about word games in our field. As has often been noted, psychologists have had a longstanding penchant for saying the same things with different words and different things with the same words, making it very difficult to compare and even understand what is being said.

With respect to the substance of my comments, I deal below with five themes. They are: (a) the concept of conservation of resources; (b) Hobfoll's claim about the limitations of appraisal theory; (c) individual differences; (d) the emphasis on loss; and (e) prediction and understanding in science.

### CONSERVATION OF RESOURCES (COR)

Given my emphasis on relational meaning, I would never argue against the importance of resources or ignore them as Hobfoll seems to imply. He states in his target article that "Resource-based theories of stress, among which COR is one . . . directly challenge appraisal-based stress theories" (p. 339).

It is necessary for me to violate the traditional etiquette that authors do not quote themselves in order to demonstrate that Hobfoll doesn't characterise my published views accurately. About resources, in Lazarus (1999), I wrote that "A good way of thinking about stressful person-environment relationships is to examine the relative balance of forces between environmental demands and the person's psychological resources for dealing with them" (p. 58). In that book I used the illustrative figure of a seesaw as an analogy for this theme (p. 59). On one side of the seesaw are environmental demands and on the other side are a person's resources. I spoke of environmental resources as opportunities, though I did not use Hobfoll's language for this.

The idea that stress is a product of the balance of forces between demands and resources has been a hallmark of my approach to stress from the beginning. On pages 71-72 of this same book, I listed as resources the following characteristics: intelligence, money, social skills, education, supportive family and friends, physical attractiveness, health and energy, and sanguinity, indicating also that this list does not exhaust the relevant possibilities.

Statements like these abound in my 1966 monograph, in Lazarus and Folkman (1984), and elsewhere, so Hobfoll didn't have to read my recent 1999 book to find this out, though I probably learned to express these ideas and their implications better over time. I suppose he is so anxious to differentiate himself from me, and to replace my theory with his own, inadequate though it be, that he overlooks what is obvious or has not read



me with care. In any case, his claim that COR is unique in focusing on resources is clearly without foundation.

What Hobfoll says about the conservation of resources also promotes serious doubts about the quality and conceptual thoroughness of his reasoning. When he writes that “COR theory suggests that resource acquisition, maintenance, and fostering are basic motivational goals that require effort and other resource costs,” (pp. 351–352), he doesn’t explain the connection between resources and major life goals or elucidate the respective roles of each.

Are resources more important than such goals in the stress process? From my standpoint, resources, including opportunities present in a person’s environment, are important because they aid people in actualising their goals. To be useful, these opportunities must be recognised as such and taken advantage of. A lack of such resources has the opposite consequence by defeating the attainment of one’s goals. It doesn’t make sense to promote COR as more important than life goals and situational intentions just because their attainment is made possible by these resources. Resources must serve the goals rather than the other way around.

Besides, to want to add yet another goal to our lives should be contemplated with great reluctance because, as we learned from McDougall’s (1908) folly many years ago, adding goals, willy-nilly, becomes an empty theoretical exercise. Why not say simply that resources are important because they facilitate adaptation by helping us attain what we need and, therefore, their loss can be a threat, and let it go at that?

In my cognitive-motivational-relational theory of stress and the emotions, I have always claimed that stress and emotions depend on the outcomes of one’s goals, whether potential or actual. What is important in the arousal of emotions is whether goals are thwarted or facilitated by the circumstances being faced (see, for example, Lazarus, Deese, & Osler, 1952; Lazarus, 1991, 1999), and available resources are always a key factor. So, I’m at a loss (no pun intended) about where Hobfoll gets the idea that I ignore resources. I am also unclear about what his analysis adds to that which I have already said.

## THE LIMITATIONS OF APPRAISAL THEORY

Early in his target article, Hobfoll presents a quotation from Geertz. This quote exemplifies his discomfort with the appraisal concept, though he protests that COR theory never denied the importance of appraising (I prefer the verb form; appraisal is the noun, which is the product of the act of appraising). To my mind, this protest, combined with his criticism of the theory of appraisal, illustrates one of the main inconsistencies inherent in his argument. The quote from Geertz states that “Human thought is

basically both social and public—that its natural habitat is a house yard, the marketplace, and the town square. Thinking consists not of ‘happenings in the head’ (though, happenings there and elsewhere are necessary for it to occur) but of a traffic . . . in significant [shared] symbols” (quoted on p. 341).

This statement from a distinguished social science authority is, I presume, reproduced to illustrate why COR theory is superior to the theory of appraising, as if appraisal has to do only with solipsistic musings and ignores the social and physical environment. In his 1998 book, Hobfoll (1998) criticised the present emphasis in psychology on cognition and the views of Bandura, Meichenbaum, and Seligman, all of whom he lumps together, in a manner that echoes his comments on appraisal in the present target article. He wrote:

I argue against a strictly cognitive view of stress. I suggest from the outset that the cognitive revolution has misled us in our understanding of the stress process. But this should not be construed to mean that elements of the stress phenomenon are not cognitive, or that cognitive psychology does not provide valuable insights into our understanding of stress. Rather, I will argue that cognitive notions have colonized too much of inquiry into stress, having misinterpreted elements of the stress process that are environmental as being a matter of appraisal (as opposed to objective reality that is perceived), and have served a Western view of the world that emphasizes control, freedom, and individual determinism. I suggest that resources not cognitions, are the *primum mobile* on which stress is hinged . . . Cognition is the player not the play. (Hobfoll, 1998, pp. 21–22)

My response to Hobfoll in Lazarus (in press) articulates the way the process of appraising can integrate the positive spin (wishful thinking) people put on what is happening in their lives and the environmental realities. The quotation is as follows:

For some, cognitive mediation refers primarily to subjective meaning, an implication that still makes many psychologists uneasy. Actually, my own outlook, which centers on an individual’s appraisal, is not a true phenomenology. I take the position that, on the whole, people perceive and respond to the realities of life more or less accurately—otherwise they could not survive and flourish. However, they also consider personal goals and beliefs in their perceptions and apperceptions, and to some extent we all live by illusion (Lazarus, 1983, 1985).

Not only do people want to perceive and appraise what happens realistically, but they also want to put events in the best light possible so as not to lose their sanguinity or hope. So the subjectivism you will see here, if this is what it should be called, is really a compromise—perhaps a better term would be a process of negotiation—between the objective conditions of life and what people wish to fear. (p. 5)

Although it can be exceedingly complex and changeable, an appraisal is nothing more than an evaluation of what is happening with respect to its significance for one's well-being. The process of appraising is always taking place in our daily lives—even as you read this commentary, listen to a lecture, or talk with a friend.

Bear in mind that the word “objective” can only refer to a *subjective consensus* among a sample of people about how they appraise a given reality. About certain facets of that environment there is likely to be little disagreement. About others—for example, the significance of valued objects, such as money or precious metals and the emotional meaning of what is happening—there will usually be substantial individual variation. There is, in effect, no such thing as an objective environment, except as it is inferred from a subjective consensus. What is taken to be the consensus, however, is seldom the total appraisal that is made of environmental conditions but a partial one. And this consensus is often irrelevant when it comes to any given individual.

The acid test of what I have just said requires only that we ask what Hobfoll would do to assess the objective environment. There is only one possible answer. Like everyone else, he must examine how a sample of subjects judges it. And what is to be done with the variations that are inevitable in that sample? Who pays attention to them? Almost no one. The variations are assimilated into a mean or median and reported as such. It is, therefore, a deception—perhaps a self-deception—to call the result a direct portrait of the objective environment because this portrait is being mediated by subjective judgments—in effect, an appraisal—and it depends on some central tendency of these appraisals. For this reason, Hobfoll's focus on the so-called objective environment is specious and cannot lead to better understanding and prediction than appraisal theory.

I can't believe that I still must defend the concept of appraisal, which I first began defending in the 1950s and 1960s in the era of radical behaviorism and operationism. Hobfoll's critique is an indication of how far he, or perhaps our field, has advanced epistemologically and meta-theoretically in the ensuing years. In any case, near the end of his target article, Hobfoll tries to answer a number of criticisms that have been directed at COR theory. To criticism that what constitutes a loss must be a product of the process of appraising, he responds in two ways.

First, he says that the criticism is a misunderstanding of his theory because he acknowledges that “appraisals are the best proximal indicators in the stress process and COR theory never stated otherwise” (p. 359). Isn't this a remarkable statement for someone to make who argues that appraisal theory is inadequate! If appraisal theory works better than any other approach and, methodologically speaking, does essentially what Hobfoll does to evaluate the so-called objective environment, then why do we need COR theory? Herein lies another of Hobfoll's inconsistencies.

Second, he says that this criticism “has been met by substantial research findings to the contrary” (p. 359). This is confusing because Hobfoll doesn’t tell the reader what the findings are to which he is referring. Do they show that an appraisal doesn’t help us predict emotional outcomes as well as the so-called “objective social facts”? Let me assure you—as Hobfoll clearly acknowledges—that there is a large body of findings on diverse aspects of the theory of appraising and coping that demonstrate that the theory does very well on this score (see, for example, Lazarus, 1999).

Most of the findings reported in the target article have nothing to do with the issue of what is subjective or objective. Many have to do with loss, which I discuss below. I get no joy from saying that his paper, with all its scholarly pretensions, adds not one whit to the sum of our knowledge about the role of appraising in stress and the emotions. We are dealing mostly with semantic games, not substantive differences.

It must be evident that the rationale for all theories of appraising is the ubiquitousness of individual differences in stress, the emotions, and coping, even under the same environmental conditions. These variations extend also to their adaptational consequences, such as physical and mental health and social functioning. Something must be going on within the person that helps explain the individual differences among the reactions. If these reactions were completely predictable on the basis of the “objective” environmental conditions being faced, there would be no grounds for a subjective approach to our emotional lives, even a modified version of one such as mine that regards appraisal as normally realistic. So I examine below the process of appraising from the standpoint of individual differences.

## INDIVIDUAL DIFFERENCES

I would never argue against the position that an individual appraisal can in some respects—often usually—be shared with other individuals. The important point, however, is that this sharing does not include every detail of the appraisal, and the emotional reactions, experienced or displayed.

In astronomy, the planets that revolve around the earth show enormous physical variation, though they all conform to general physical science principles. These individual variations *and* the general principles that underlie them are essential features of the science of astronomy. The difference between astronomy and psychology, however, is that people have minds, goals, and situational intentions, and we make evaluative judgments while physical objects do not.

In an effort to understand the emotional life, why would anyone want to decorticate us, as it were, by not taking these cognitive-motivational-relational processes into account? My answer is only if we still think in terms

of the abandoned epistemology of radical behaviorism, which rejects concepts that are heavily subjective as non-science.

People vary greatly in beliefs, values and commitments, and personal resources, as well as in many other ways, which is why they react differently to the same or similar conditions. When these personal attributes are juxtaposed with environmental conditions, which are also apt to differ in details depending on the temporal and physical location of the individual in that environment, the resulting appraisals and emotions are rarely if ever the same despite overlaps in them among people. The devil, as they say, lies in the details. Most appraisals are quite complex even when they are rapid or seemingly instantaneous. They take into account a great number of factors, both in the environment and within the person.

It is, of course, true that most people who are exposed to a common catastrophe, whether natural or man-made, experience overlapping emotional reactions. Yet despite these overlaps, emotional reactions and the appraisals they result from are never identical, even within the same individual when observed over time and different life circumstances. Like many psychologists, Hobfoll adopts an all-or-nothing approach, dichotomising what is normative and what is individual—in effect, considering the mind in either/or terms. This leads him to adopt a regressive epistemic stance, which I earlier characterised as residual behaviorism.

Thus, an appraisal can be said to be shared only if we settle for a vague statement that all these persons are under stress. If we fail to do a close examination of the appraisals and the reactions they produce, we will miss the obvious point that we have left out a substantial part of the process. This point would not be missed, however, if we designed our theories and research accordingly, but we remain too addicted to central tendencies and over-simple normative generalisations to be concerned with individual variation.

This is not to say that a comparison of the appraisals of given individuals with those of other people under comparable conditions would not be important or useful. Applied psychology, including the sub-fields of clinical and, to a less extent, organisational psychology—because it is usually focused more on social processes than on individuals—has to come to terms with individual differences in appraisals and emotional reactions (see Lazarus & Cohen-Charash, *in press*).

When we are concerned with an individual, normative data, which are always probabilistic, do not help much. Our penchant for defining science reductively—that is, as the making of simplifying generalisations—encourages many of us to avoid the study of individual differences. They are, however, a scientific embarrassment only if we seek elegant, reductive generalisations, which focus on the forest rather than the trees.

Spiegel (1997) has recently addressed this point with a delicious epigram that reads as follows: “We are often caught in the dilemma that our theories

are either too elegant to be meaningful or too full of meaning to be elegant” (p. 170). If Hobfoll regards the theory of appraising to be overly concerned with individuals, as he says, I respond that this is his most serious error, especially when he speaks of the objective environment. It has also been an almost constant error in psychology throughout its history, which has been excessively normative—that is, concerned too much with central tendencies and having too little regard for variation, except perhaps in the field of personality.

### THE CONCEPT OF LOSS

The concept of loss is central to Hobfoll’s approach and he says it “distinguishes COR theory from appraisal theory” (p. 343). I have for a long time emphasised three different kinds of stress appraisal, harm/loss, threat, and challenge, and I fail to understand how Hobfoll’s definition of loss can contain more information than what I mean by harm/loss. What he says cannot distinguish his theory, if that is what his substantive claims should be called, from mine.

Loss has always had a major place in my writings and I have examined it closely (Lazarus, 1991, 1999; Lazarus & Lazarus, 1994). A sample of my writings about this includes the grief process, which has to do with coping with the death of a loved one or some other major loss, such as productive work or another life role.

Grief depends on the details of the loss as they are perceived and appraised by the bereaved person. The details include how it came about and the pre-death and post-death relationship with the loved one. Stress and emotion cannot be properly understood without considering the *coping process*, which is an integral feature of an emotion. Most stress and emotion theorists, including Hobfoll, give the coping process short shrift.

For example, if the loved one died after suffering terrible pain and debilitation, the emotional reaction may include relief and guilt about the almost forbidden thought that the suffering is finally over, or anger about the indifferent care given by others to the dying person. Disbelief and denial are probably more likely in the case of a sudden, unexpected death. However, there are no universals in this—these reactions do not apply to everyone—either in the pattern of emotions aroused or the processes of coping that are chosen. The emotional reaction depends on how the person who is bereaved perceives and interprets the significance of what has happened, though this can vary at different time periods during the pre- and post-death drama.

Irrevocable loss, which can be illustrated by the death of a loved one, may lead to depression but only in some persons, not all. Depression is a complex pattern of emotions that typically includes anger, anxiety, guilt, and perhaps

shame, with each emotion focusing on different aspects of the relationship with the loved one (see also my discussion of hope as an antidote to despair in Lazarus, 1999).

In contrast to depression, I would guess that the emotion of wistful sadness, which can come to dominate after a time, especially at anniversaries of important moments in the relationship, probably requires that the bereaved person has somehow resolved the meaning of the loss in the process of grieving.

This meaning reflects the history of the relationship in the past and present. The emotions aroused have to do with the way this relational history is also to be conceived of in the future when the bereaved person takes on new life commitments (see also Marris, 1975). And when bereaved persons come to accept that the loved one will never return, at least during this lifetime—in effect, that nothing can be done to restore the loss—the struggle to cope and the many emotions involved may give way to wistful sadness as the dominant emotion.

In recent writings (e.g. Lazarus, 1993, 1999), I have been treating stress as a subset of the broader topic of the emotions. This requires adding a fourth appraisal category, benefit, in order to accommodate this shift in emphasis because emotions include positively toned mental states as well as negative ones.

One rationale for this shift is that the discrete emotions, for example, anger, anxiety, shame, hope, compassion, and so forth, provide far more information about a person's struggle to adapt than does the more modest knowledge that a person is under stress. A person under stress, as in the case of someone who is struggling to cope with harm/loss, may experience any of a wide variety of emotions. Anger, for example, involves distinctive antecedents, a subjective reaction, and behavioral (probably physiological too) consequences compared with anxiety. I regard the relational meaning of each emotion as distinctive. Each discrete emotion has a unique plot or personal drama—in effect, it is a mini-theory that must be consistent with the general theory of emotion within which it falls (Lazarus, 1991, 1999).

## PREDICTION AND UNDERSTANDING IN SCIENCE

I don't believe prediction is the end of all science, though some eminent scientists argue that all science can do is to predict but that it cannot truly understand, as Richard Lewontin (2000) says in his latest book, *The Triple Helix*. I prefer to put my faith in the effort to understand rather than predict. Prediction, which is based on observed contingencies, functions in science in two important ways: first, it is the main basis of the effort to control the world in a practical sense; second, it is used to test the validity of our understanding.

Psychology doesn't do very well, even normatively, in predicting what people think, do, and feel, but it does even more poorly with the individual. If we consider the modest size of the correlations and mean differences between conditions that are typically found in psychological research, it should be evident that, in the main, prediction is not a very practical enterprise.

Psychology once bragged about its use of intelligence and aptitude tests to demonstrate its powers of practical prediction, but I think no longer. Yet, we continue to cherish the illusion of our ability to predict and control.

When our research findings are statistically significant, the findings tell us mainly that we may have found one of many causal variables that have a bearing on a given outcome or effect. But modest sized correlations and differences do not greatly increase the accuracy of our predictions over chance. This is especially the case when we address the most important problems of human adaptation inherent in the field of stress, coping, and the emotions. To make this point is to confront one of the great intellectual threats to psychologists who want to think of their field as a natural science. Denial is one of the most frequent defenses against this threat, and we would be better off if we confronted this unpalatable truth rather than hiding from it.

I conclude that in his effort to overcome what he considers defects or limitations of theories of appraising, Hobfoll does not correctly grasp what their real advantages and limitations are nor does he offer any important new insights. His tendency to label his concepts differently does not make what he says a new contribution.

So I say with regret that I find little merit in his analysis. To be convincing, Hobfoll must demonstrate that his way of thinking does a better job of understanding and prediction than existing appraisal theories. In my opinion, he has not done this. Therefore, his determined effort to replace or change appraisal theory on the basis of his own ideology must, in the long run, arrive at a dead end.

## REFERENCES

- Hobfoll, S.E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, *44*, 513–524.
- Hobfoll, S.E. (1998). *Stress, culture, and community: The psychology and philosophy of stress*. New York: Plenum.
- Lazarus, R.S. (1966). *Psychological stress and the coping process*. New York: McGraw-Hill.
- Lazarus, R.S. (1983). The costs and benefits of denial. In S. Breznitz (Ed.), *The denial of stress* (pp. 1–30). New York: International University Press.
- Lazarus, R.S. (1985). The trivialization of distress. In J.C. Rosen & L.J. Solomon (Eds.), *Preventing health risk behaviors and promoting coping with illness* (Vol. 8),



- Vermont Conference on the Primary Prevention of Psychopathology* (pp. 279–298). Hanover, NH: University Press of New England. Reprinted in B.L. Hammonds & C.J. Scheirer (Eds.), *Psychology and health* (The master lecture series, 1983, Vol. 3, pp. 121–144). Washington, DC: American Psychological Association.
- Lazarus, R.S. (1991). *Emotion and adaptation*. New York: Oxford University Press.
- Lazarus, R.S. (1993). From psychological stress to the emotions: A history of changing outlooks. *Annual Review of Psychology* (pp. 1–21). Palo Alto, CA: Annual Review, Inc.
- Lazarus, R.S. (1998). *Fifty years of the research and theory of R.S. Lazarus*. Mahwah, NJ: Erlbaum.
- Lazarus, R.S. (1998). Coping from the perspective of personality, *Zeitschrift für Differentielle und Diagnostische Psychologie*, 19, 213–231.
- Lazarus, R.S. (1999). *Stress and emotion: A new synthesis*. New York: Springer.
- Lazarus, R.S. (1999). Hope: An emotion and a vital coping resource against despair. *Social Research*, 66, 653–678.
- Lazarus, R.S. (in press). Relational meaning and discrete emotions. In K.R. Scherer, A. Schorr, & T. Johnstone (Eds.), *Appraisal processes in emotion: Theory, methods, research*. New York: Oxford University Press.
- Lazarus, R.S., & Cohen-Charash, Y. (in press). Discrete emotions in organizational life. In R. Payne & C.L. Cooper (Eds.), *Emotions in organizations*. Chichester: Wiley.
- Lazarus, R.S., Deese, J., & Osler, S.F. (1952). The effects of psychological stress upon performance. *Psychological Bulletin*, 49, 293–317.
- Lazarus, R.S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Lazarus, R.S., & Lazarus, B.N. (1994). *Passion and reason: Making sense of our emotions*. New York: Oxford University Press.
- Lewontin, R. (2000). *The triple helix*. Harvard University Press.
- McDougall, W. (1908). *An introduction to social psychology*. Boston: Luce.
- Marris, P. (1975). *Loss and change*. Garden City, NY: Anchor Books.
- Spiegel, D. (1997). Understanding risk assessment by cancer patients. A response to Somerfield. *Journal of Health Psychology*, 2, 170–171.

## Four Perspectives on Conservation of Resources Theory: A Commentary

James Campbell Quick and Joanne H. Gavin\*

*The University of Texas at Arlington, USA*

Hobfoll's (this issue) Conservation of Resources (COR) theory is a valid, robust, important theory in the domain of stress that deserves an even wider range of audiences than it currently enjoys. The central line of reasoning running through the theory as advanced in the lead article, as well as the evidence offered in support, is primarily psychological in nature. We have examined Hobfoll's (this issue) COR theory through the lenses of four alternative perspectives to that of psychology and find evidentiary support for the theory. When diverse disciplines examine stress, they often use discipline-specific language and terminology to describe constructs and processes that are phenomenologically the same. By transcending disciplinary boundaries and seeking commonality across theories and data, we seek a broader view of stress. While we have resisted a fine-grained approach, we acknowledge that there may be some devils in the details.

While Hobfoll (this issue) elects to place COR theory in the nexus between environmental and adaptation theories of stress, we have chosen a different analytic framework to discuss COR theory. The four perspectives we consider are the physiological perspective, the faith perspective(s), the wealth perspective, and the prevention perspective. Stress is not new to the human condition, as Hobfoll points out when he takes us back in time to Job and one of the earliest known records addressing the problem of human suffering. Stated even more starkly in the words of Walter B. Cannon: "The business of killing and of avoiding death has been one of the prime interests of living beings throughout their long history on earth" (Cannon, 1929: 377). The key concepts from which we work in COR theory are: loss, investment, gain, defense, trauma and disaster, and conservation. These are powerful concepts that communicate important truths about stress, human nature, and the human condition on earth.

---

\* Address for correspondence: P.O. Box 19467, 701 South West Street, Room 209B, Arlington, Texas 76019-0467, USA. Email: [jquick@uta.edu](mailto:jquick@uta.edu)/[gavin@uta.edu](mailto:gavin@uta.edu)

## THE PHYSIOLOGICAL PERSPECTIVE

While Hobfoll (this issue) rightly anchors man's earliest consideration of the stress process in Job, he only makes passing note of the biological aspects of the stress process early in the lead article, then biology is dropped. Our current knowledge of stress and distress or strain is rooted in the research of Harvard physiologist Walter B. Cannon MD. He extrapolated from a core set of physiological research data postulating the existence of a systemic response to environmental stimuli which he first labeled "the emergency response" (Cannon, 1915). In the 1930s, Stewart Wolf confirmed in humans what Cannon had found in his laboratory animal research. Thus, the stress response appears firmly rooted in our instinctual nature, whether manifested in males as "fight-or-flight" or in females as "tend-and-befriend" (Taylor, Klein, Lewis, Gruenewald, Gurung, & Updegraff, 2000). The key function of the stress response is defense against loss, especially loss of life; it is the survival response at our physiological core. The threat of loss triggers the individual stress response, and there are collective (group and organisation) parallels (Staw, Sandelands, & Dutton, 1981).

While Cannon set the cornerstone for the physiological perspective on stress, Hans Selye MD (1973) was the one who did the most extensive medical research and brought this important concept to broad public attention by the middle of the twentieth century. Selye is the figure most broadly identified with the origin of the stress concept. His research demonstrated the central and/or contributory role of stress in a wide range of diseases and disorders that contribute to human suffering (Selye, 1976). In addition to its causative and contributing role in diseases and health disorders, stress also results from the threat of the loss of function and/or life that is associated with health problems, both for the patient and the physician. It is the threat of loss and risk to life that spurs the patient and physician to action.

The physiological perspective lends strong support for Principle 1 in COR theory; that is, the primacy of resource loss in the stress process. Man's basic physiological design is to protect, even defend, against loss. This is further supported in the line of life change events research reaching back to the time of Cannon. From Adolph Meyer's early life charts (circa 1911–15), Thomas Holmes and Richard Rahe established a line of research examining the health impacts of life change events (Rahe, 1994; Winters, 1952). The most adverse life change events from a physical health perspective (i.e. death of a spouse or of a close family member, divorce, jail term) center around the experience of loss, whether it be the loss of a loved one or loss of one's own freedom.

Extending the physiological perspective into the broader field of medicine leads to further support for COR theory, and in particular for Principle 2 concerning resource investment. Medical treatment and intervention may be understood as a resource investment strategy through which resources (i.e.

men and women) are preserved, conserved, and enhanced following damage, loss, and/or trauma. Medicine then becomes a mechanism of resource investment accorded high value in the developed, developing, and underdeveloped nations of the world (Cooper, 1996). The preponderance of research and data from the physiological perspective on stress thus lends strong support for the core principles and concepts within COR theory.

A careful review of the history of the stress concept reveals that the physiological perspective is also connected to other disciplines relevant to the stress process. For example, the physiological perspective has a psychological connection. Specifically, Walter B. Cannon's interest in psychology is apparent from his examination of the effects of emotions on physiology as well as his membership in the fledgling American Psychological Association. (See B. Cannon, 1994. We have previously characterised Walter B. Cannon as the physiologist with a psychological spirit.) What is somewhat less visible or apparent in Cannon's work is the theological connection. We suggest that a careful reading of Chapter XX in the 1929 revision of Cannon's original book on the subject leaves a distinct theological impression. From whence did this connection come?

### THE FAITH PERSPECTIVE(S)

By introducing Job early in the lead article, Hobfoll cracks a door between theology and natural science. We believe that Walter Cannon cracked the same door in 1929. We would like to explore the isthmus between these two broad domains of knowledge and ways of knowing as relates to the stress process. While physiology and, at least in North America, psychology fall in the domain of the natural sciences (*Naturwissenschaften*), theology and religion fall in the domain of the humanistic sciences (*Geisteswissenschaften*, whose literal English translation is "sciences of the spirit"). While these two forms of science or ways of knowing are quite different, both have something to offer on the subject of stress. We have had some interesting conversations from our two different faith perspectives (Presbyterian and Catholic) and we invite you to think theologically for a moment.

Hartshorne (1958) suggests that major advances in scientific knowledge in the early twentieth century, with even greater promise to come, came into conflict with the dogmatic religion of the period and resulted in a divisive battle line between science and religion. Hence, men like Cannon were often pressed to choose sides in this conflict. Yet Chapter XX in his 1929 revised book appears strongly influenced by a theological or faith perspective. How could this be? A key to the puzzle may lie in Walter's son Bradford Cannon's story of a close personal relationship with the Reverend Samuel Cruthers, in whose church Walter B. Cannon had grown up as a child in Minnesota. As a Harvard physiologist during his adulthood, Cannon did not attend Cruthers'

church in Boston. However, he did take his son Bradford and his two daughters to Cruthers' church each week.

Faith and belief have consequences in action and behaviors. Job's faith guided him through stressful times caused by a wide range of resource losses. Mark 14 reports how Jesus' faith guided him through one of his most distressful experiences in the place called Gethsemane. It was there that Jesus came to grips with the reality of his own crucifixion, a stressful realisation for any human being knowing that he would lose his own life shortly. While the physiological perspective of stress would call for fight-or-flight at this juncture, let us suggest that is a short-term resource view. A faith perspective calls for a long-term view of loss and gain, even a transcendent attachment to a higher being (Quick, Nelson, Matuszek, Wittington, & Quick, 1996), and it was his faith perspective which eased Jesus' stress in the garden. Loss and gain then take on different values and meanings within one's own faith perspective, and the surrender of the individual life may be seen as a significant investment in lifting the human condition and inspiring those who follow. Such was the experience of Dietrich Bonhoeffer who returned voluntarily to his native Germany and lost his life, peacefully, standing against the atrocities of the Holocaust.

What is interesting in reviewing the natural scientific research on the topic of stress and the scriptural guidance of the Judeo-Christian sacred writings is the commonality of their message. For two examples, we choose relaxation and confiding in others. First, Herbert Benson's (1974) research physiologically demonstrated how the relaxation response has fundamentally the reverse effects of the stress response, calming and quieting the mind and body. The time-honored Judeo-Christian tradition of peaceful prayer, as engaged in by both Job and Jesus, takes a person to the same place as does Benson's relaxation response. Second, Pennebaker's (1990) line of basic psychological research demonstrated the healing power of expressive writing and confiding in others, improving health and well-being while reducing stress effects. The time-honored Catholic tradition of confession is a faithful form of what Pennebaker has validated scientifically.

While the language and terminology of natural science and theology are often quite different, we find strong support for the key concepts and principles of COR theory in at least the faith perspectives reflected in the Judeo-Christian scriptural writings. For those of faith to think importantly about key concepts such as loss, gain, investment, and conservation can be highly profitable and extremely useful, from both a theological and practical perspective.

## THE WEALTH PERSPECTIVE

As Hobfoll (this issue) explains, the basic tenet of COR theory is that individuals strive to obtain, retain, protect, and foster those things they value.

Given this tenet, COR theory finds rich support in the perspective of wealth accumulation and conservation. No longer is it only the poor who experience the stress of potential loss of financial security. We have an adult population who has either personally or whose parents have lived through Black Friday and the Great Depression. Today we experience stock market corrections so severe that billions are lost in a single day. Through these experiences individuals are learning to guard against such loss by protecting their financial base and thereby safeguarding their physical and psychological health.

In the short-run, there seems no doubt that wealth is significantly and directly associated with living a healthier and longer life. Socioeconomic status (SES) and its key measurements of income, education, and occupational status has been a strong and consistent predictor of morbidity and premature mortality (Adler, Boyce, Chesney, Folkman, & Syme, 1993). At the aggregate level or within a census tract, differences in mortality rates have been associated with median monthly rents, family income, and the poverty level. At the individual level, SES has been inversely related to the incidences of and mortality from cardiovascular disease, cancer, and respiratory disease. Although there is a direct link between SES level and ability to obtain quality health care, there is also a link between wealth and behaviors such as smoking, diet and lack of exercise and their related risk factors such as cholesterol level, obesity, and blood pressure. The lower the financial status of the individual, the more susceptible he or she is to the stresses of life, both through vulnerability to resource loss and the lack of resource reserves to survive such a loss.

In an effort to develop and sustain the wealth that protects one from the health risks of lower SES, many individuals have developed strategies for safeguarding their wealth. While many still live at their financial limits or even beyond, many individuals have begun to recognise the long-term benefits of building a strong financial base. These individuals are incorporating the key concepts of COR theory by investment of their financial gains in hopes of protecting themselves from the trauma and stress resulting from the fear of loss or its actual occurrence.

Recent research by Stanley and Danko (1997) provides an insightful examination into the methods people use to financially protect themselves and their families. The surprising result of this extensive research is that those most successful in conserving their resources are often not the people you would expect. They aren't the ones living in the large houses or driving the expensive cars; but they are the hard working individuals who live well within their means. In addition to living below their means, these people have several other factors in common which help them conserve their resources. They allocate their time, energy, and money to building wealth. They believe that financial independence is more important than

social status. Finally, their adult children are economically self-sufficient. Each of these factors enables the individual to invest their resources making themselves less vulnerable to resource loss and more capable of resource gain.

Although this investment of resources is critical to financial security and COR theory, there is a point at which personal gain becomes self-serving. Andrew Carnegie addressed this subject of personal wealth many years ago in his essay "Wealth" (1889). From Carnegie's perspective, individuals were but stewards of the wealth that free enterprise provided them. As a young man Carnegie followed the rules for acquiring and conserving wealth (Hall, 1992). He worked hard, lived a modest lifestyle, and reinvested his money. This frugality afforded him one of the largest fortunes ever amassed by an individual. With this great wealth, however, came the social responsibility of giving back to those less fortunate. For Carnegie, the responsibility of stewardship was not an option; it was a necessity.

This long-term perspective of wealth is the extension to the protection and conservation of resources proposed by COR theory. Once we have protected ourselves in the short term, we must go beyond self-interest to the greater good of society as a whole. The reinvestment of wealth for the betterment of not only oneself and one's family but also of others enables the fundamentals of COR theory to improve the physical and psychological health of all.

## THE PREVENTION PERSPECTIVE

The prevention perspective on stress is in many ways a complement to the physiological perspective, both having roots in medicine and physical health. What is different about the prevention perspective is its anchor in public health and preventive medicine. The public health notions of prevention grew out of the efforts to manage and stop disease epidemics. Prevention is highly applicable to chronic disorders and diseases. Disease epidemics can have devastating effects on human populations, as evidenced by the Black Plague which killed about one-third to one-half of the European population during the Middle Ages. More recently, the worldwide concern with an AIDS epidemic is centered on the same basic fear. Disease epidemics are determined by the rate of penetration, level of impact, and percentage of population affected by a disease. Disease epidemics are frightening and highly stressful for all concerned because of the impending loss(es).

The theory of preventive stress management draws on the concepts of preventive medicine and overlays them on an understanding of the basic stress process (Quick, Quick, & Nelson, 1998). The preferred point of intervention from a public health and preventive medicine standpoint is primary

prevention; that is, prevention aimed at eliminating a risk factor for distress, recognising that loss or damages are primary sources of distress for individuals. If primary prevention is not feasible, not achievable, or fails, then secondary prevention is the next best alternative. Secondary prevention aims at strengthening the host and arresting the health problem at a preclinic stage. Finally, tertiary prevention, or treatment, is available in the event of the lack of success in primary and/or secondary prevention.

One highly successful example of the success of prevention concerns suicide rates in the US Air Force. In 1995, the USAF Surgeon General's chief clinical psychological consultant initiated a very assertive suicide prevention initiative throughout the force. By 1999, the Centers for Disease Control and Prevention (CDC) reported significant declines in suicide rates across the US Air Force. This result was achieved based on a serious investment of human and material resources to protect and conserve members of the force, especially the younger members who are much more vulnerable to the problem of suicide.

The COR theory of stress enriches public health and preventive medicine as they are concerned with stress because COR theory brings clear focus to the primacy of loss in the stress process. Further, COR theory's Principle 2, which focuses attention on resource investment, lends strong support to the public health arguments of the importance of prevention, especially primary prevention. Prevention strategies are resource conservation strategies, which do require an investment. Unfortunately, some individuals and organisations do not want to invest resources in prevention unless there is a known and impending risk of loss. However, COR theory suggests that where there is risk for resource loss is a good place to invest resources to protect against the loss.

Preventive stress management is concerned with health promotion as well as distress prevention. The theory of preventive stress management and COR theory appear to be in parallel on at least two key points, which are a major concern with protection against distress and loss as well as a secondary concern with health promotion and gain. The concept that initial loss begets future loss resonates strongly and positively with the public health notions of prevention. Because prevention is most appropriate for chronic categories of health problems, such as stress, the three stages of prevention (primary, secondary, and tertiary) are designed to preclude any individual or group from beginning the slippery slide down from known health risk factor through asymptomatic to symptomatic disease or disorder. The underlying principle or notion is that once one starts down the road on a chronic disorder it is increasingly difficult to stop; far better to never start down the road. If one never experiences initial loss, then one has far less concern for subsequent loss. Prevention and conservation are siblings within the family addressing stress, at home or at work.



## CONCLUDING COMMENT

Hobfoll's (this issue) COR theory of stress is a valid and robust contribution to the stream of stress scholarship dating from near the turn of the last century (1900). COR theory has important implications for organisations as well as individuals (Cooper, 1998). While psychologists can well understand the theory and data based upon its presentation in the lead article, it is equally important that physicians, physiologists, theologians, business men and women, and public health professionals become more fully acquainted with the core principles, corollaries, and concepts presented in COR theory.

## REFERENCES

- Adler, N.E., Boyce, W.T., Chesney, M.A., Folkman, S., & Syme, S.L. (1993). Socioeconomic inequalities in health: No easy solution. *Journal of the American Medical Association*, 269, 3140–3145.
- Benson, H. (1974). Your innate asset for combating stress. *Harvard Business Review*, July–August, 49–60.
- Cannon, B. (1994). Walter Bradford Cannon: Reflections on the man and his contributions. *International Journal of Stress Management*, 1(2), 145–158.
- Cannon, W.B. (1915/1929). Chapter XX: Alternative satisfactions for the fighting emotions. *Bodily changes in pain, hunger, fear, and rage: An account of recent researches into the function of emotional excitement* (pp. 377–392). New York: Appleton.
- Carnegie, A. (1889). Wealth. *North American Review*, 148(391), 659–664.
- Cooper, C.L. (Ed.) (1996). *Handbook of stress, medicine, and health*. Boca Raton, FL: CRC Press.
- Cooper, C.L. (Ed.) (1998). *Theories of organizational stress*. Oxford: Oxford University Press.
- Hall, J.F. (1992). *The Andrew Carnegie reader*. Pittsburgh: University of Pittsburgh Press.
- Hartshorne, M.H. (1958). *The promise of science and the power of faith*. Philadelphia, PA: Westminster Press.
- Hobfoll, S.E. (this issue). The influence of culture, community, and the nested-self in the stress process: Advancing Conservation of Resources Theory. *Applied Psychology: An International Review*.
- Pennebaker, J.W. (1990). *Opening up: The healing power of confiding in others*. New York: Avon Books.
- Quick, J.C., Quick, J.D., Nelson, D.L., & Hurrell, J.J. (1997). *Preventive stress management in organizations*. Washington, DC: American Psychological Association.
- Quick, J.D., Nelson, D.L., Matuszek, P.A.C., Wittington, J.L., & Quick, J.C. (1996). Social support, secure attachments, and health. In C.L. Cooper (Ed.), *Handbook of stress, medicine, and health* (pp. 269–287). Boca Raton, FL: CRC Press.

- Quick, J.D., Quick, J.C., & Nelson, D.L. (1998). The theory of preventive stress management in organizations. In C.L. Cooper (Ed.), *Theories of organizational stress* (pp. 246–268). Oxford: Oxford University Press.
- Rahe, R.H. (1994). The more things change... *Psychosomatic Medicine*, *56*, 306–307.
- Selye, H. (1973). Evolution of the stress concept. *American Scientist*, *61*, 692–699.
- Selye, H. (1976). *Stress in health and disease*. Boston: Butterworth.
- Stanley, T.J., & Danko, W.D. (1997). *The millionaire next door: The surprising secrets of America's wealthy*. Atlanta, GA: Longstreet Press.
- Staw, B.M., Sandelands, L.E., & Dutton, J.E. (1981). Threat-rigidity effects in organizational behavior: A multilevel analysis. *Administrative Science Quarterly*, *26*, 501–524.
- Taylor, S.E., Klein, L.C., Lewis, B.P., Gruenewald, T.L., Gurung, R.A.R., & Updegraff, J.A. (2000). Biobehavioral responses to stress in females: Tend-and-befriend, not fight-or-flight. *Psychological Review*, *107*, 411–429.
- Winters, E.E. (Ed.) (1952). *The collected papers of Adolf Meyer, Volume IV, Mental Hygiene*. Baltimore: The Johns Hopkins Press.

## Stress, Resources, and Proactive Coping

Ralf Schwarzer\*

*Freie Universität Berlin, Germany*

The lead article by Steven Hobfoll (this issue) marks another step forward in his Conservation of Resources (COR) theory. It extends his previous writings and puts particular emphasis on cultural scripts and communal coping.

This brief commentary will focus on only two aspects, namely on Hobfoll's approach as compared to the one by Lazarus and on related advances in the field, such as proactive coping. Hobfoll (this issue) argues that the introduction of a cognitive-relational theory of stress by Lazarus (1966) paradoxically constituted an "obstacle in the advancement of stress theory" due to its particular emphasis on cognitive appraisals and due to his followers' overwhelming tendency to subjectify stressful events. In contrast, I believe that the work of Lazarus has been a blessing to psychology. Stress researchers and many other psychologists have adopted his view, and since then, the role of transactional processes and cognitions as determinants of behaviour

---

\* Address for correspondence: Health Psychology, WE 10, Studiengang Psychologie, Freie Universität Berlin, Habelschwerdter Allee 45, 14195 Berlin, Germany. Email: health@zedat.fu-berlin.de

and emotions has been widely acknowledged. Moreover, COR theory has been inspired by this paradigm and could not have been developed without the prior work of Lazarus. Most features within COR theory are already included in that early work—however, with different emphasis. This pertains, for example, to the notion of resources, losses, processes, and context. To underscore this argument, I will briefly summarise those elements of Lazarus's theory that are relevant for the comparison of both positions. I will also elaborate on recent advances made by Hobfoll and others and suggest that his theory serve as the new standard.

### THE FORMER STANDARD IN THE FIELD: LAZARUS'S COGNITIVE-RELATIONAL THEORY OF STRESS

In the history of stress research, three general paradigms can be distinguished: (a) the *response-based* paradigm (stress is considered an unspecific response of any organism to various kinds of stimuli), (b) the *stimulus-based* paradigm (stress is mainly determined by the nature of the stressor, such as a particular life event), and (c) the *cognitive-transactional* paradigm (stress as an ongoing process, initiated and maintained by the cognitive appraisal of demands and resistance resources). The latter is the standard in the field of psychology and, thus, should serve as the yardstick to judge the benefits of Hobfoll's theory.

This cognitive-relational theory of stress emphasises the continuous, reciprocal nature of the interaction between the person and the environment. Since its first publication (Lazarus, 1966), it has not only been further developed and refined, but it has also been expanded to a meta-theoretical concept of emotion and coping processes (Lazarus, 1991). Stress is defined as a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being.

Within a meta-theoretical system approach, Lazarus (1991) conceives the complex processes of emotion as composed of causal antecedents, mediating processes, and effects. *Antecedents* are personal resources such as wealth, social networks, competencies, commitments or beliefs on the one hand, and objective demands, critical events, or situational constraints on the other. *Mediating processes* refer to cognitive appraisals of such resources and demands as well as to coping efforts. The experience of stress and coping bring along *immediate effects*, such as affect and physiological changes, and *long-term effects* concerning psychological well-being, somatic health, and social functioning.

There are three meta-theoretical assumptions: *transaction*, *process*, and *context*. It is assumed, first, that emotions occur as a specific encounter of the person with the environment, and that both exert a reciprocal influence

on each other; second, that emotions and cognitions are subject to continuous change; and third, that the meaning of a transaction is derived from the underlying context, that is, various attributes of a natural setting determine the actual experience of emotions and the resulting action tendencies.

Research has mostly neglected these meta-theoretical assumptions in favour of unidirectional, cross-sectional, and rather context-free designs. Within methodologically sound empirical research it is hardly possible to study complex phenomena such as emotions and coping without constraints. Also, on account of its complexity and transactional character leading to interdependencies between the involved variables, the meta-theoretical system approach cannot be investigated and empirically tested as a whole model. Rather, it represents a heuristic framework that may serve to formulate and test hypotheses in selected subareas of the theoretical system only. Thus, in practical research one has to compromise with the ideal research paradigm. Investigators have often focused on structure instead of on process, measuring single states or aggregates of states. Ideally, however, stress has to be analysed and investigated as an *active, unfolding process*. Cognitive appraisals comprise two component processes, namely (primary) *demand appraisals* and (secondary) *resource appraisals*. Appraisal outcomes are divided into the categories challenge, threat, and harm/loss. First, demand appraisal refers to the stakes a person has in a stressful encounter. A situation is appraised as challenging when it mobilises physical and mental activity and involvement. In the evaluation of *challenge*, a person may see an opportunity to prove herself or himself, anticipating gain, mastery, or personal growth from the venture. The situation is experienced as pleasant, exciting, and interesting, and the person feels ardent and confident in being able to meet the demands. *Threat* occurs when the individual perceives danger, anticipating physical injuries or blows to one's self-esteem. In the experience of *harm/loss*, some damage has already occurred. This can be the injury or loss of valued persons, important objects, self-worth, or social standing.

Second, resource appraisals refer to one's *available coping options* for dealing with the demands at hand. The individual evaluates his or her competence, social support, and material or other resources that can help to readapt to the circumstances and to re-establish an equilibrium between person and environment.

So far, this has been a very brief summary of Lazarus's (1991) position. The question is in which respect Hobfoll's new position is unique.

## COR THEORY AS AN ADVANCEMENT IN THE FIELD

Hobfoll (1988, 1998) has expanded stress and coping theory with respect to the conservation of resources as the main human motive in the struggle with

stressful encounters. As can be seen from the summary above, resources have also been an important ingredient in Lazarus's theory. The difference lies mainly in the status of *objective and subjective resources*. Lazarus sees objective resources only as antecedents that may have an indirect effect, whereas subjective resources (resource appraisals) represent the direct precursors of the stress process. Actually, the simultaneous appraisal of demands and resources constitutes the beginning of a stress episode. In contrast, Hobfoll, considering both objective and subjective resources as components, lends more weight to the former. Thus, the difference between the two theories, in this respect, is a matter of degree, not a matter of principle. Hobfoll tends to reduce Lazarus's approach to a highly subjective "appraisal theory" and argues that objective resources are more important. Although cognitive appraisal is the key feature there, this term does not do justice to the comprehensive model of a stress episode that starts with objective antecedents, includes appraisal as well as coping, and ends with more or less adaptive outcomes such as health, well-being, or social harmony. Viewed from a process perspective, Lazarus deals more with initial appraisal, whereas Hobfoll deals more with prior objective resource status and subsequent coping. Thus, his model could also be labelled a "resource-based coping theory".

Resource loss, central to Hobfoll, is also included in the work by Lazarus, who has elaborated on various appraisal outcomes such as challenge, threat, harm/loss, and benefit. These concepts have been very useful as heuristics in stress research (see Jerusalem & Schwarzer, 1992, for a detailed analysis). Hobfoll instead prefers the categories (a) *resources threatened with loss*, (b) *resources actually lost*, and (c) *failure to gain resources*. This loss/gain dichotomy, and in particular, the resource-based loss spirals and gain spirals shed a new light on stress and coping. The *change* of resources (more so the loss than the gain) appears to be particularly stressful whereas the mere lack of resources or their availability seems to be less influential.

*Failure to gain resources following an investment* is a feature that I cannot find directly in other stress theories. Hobfoll argues that burnout and ill health might be consequences of such a detrimental motivational state. In a similar vein, Siegrist (1996) has suggested that "effort-reward imbalance" may compromise the health of employees. This is a highly attractive concept that enriches stress and coping research.

In general, there is a trend to broaden stress and coping research by including positive strivings that were formerly domains of motivation and action theories. The notions of mastery, optimisation (Baltes, 1997), challenge and benefit (Lazarus, 1991), and resource gain (Hobfoll, this issue) are in line with proactive coping theories (e.g. Aspinwall & Taylor, 1997; Schwarzer, in press). People strive for more resources, desire to maximise gains, and build up resistance factors either to ward off future crises or to grow and

cultivate their capabilities for their own sake. This forward time perspective opens new research questions and helps to overcome traditional coping models that overemphasise the reactive nature of coping. The following section serves to provide a further perspective that stems from a time-related classification of coping modes.

#### FOUR COPING MODES IN TERMS OF TIMING AND CERTAINTY

Lazarus (1991) separates *problem-focused* from *emotion-focused* coping. Many other suggestions to categorise coping dimensions have been made (for an overview see Schwarzer & Schwarzer, 1996). A time dimension has been suggested by Schwarzer (in press) in his *proactive coping theory* that will be briefly introduced here since it overlaps with Hobfoll's theory. Coping depends, among other things, on the time perspective of demands and the subjective certainty of events. Reactive, anticipatory, preventive, and proactive coping can be distinguished. Reactive coping refers to harm or loss, as experienced in the past, whereas anticipatory coping pertains to inevitable threats in the near future. Preventive coping refers to uncertain threats in the distant future, whereas proactive coping involves future challenges that are seen as self-promoting (see Fig. 1).

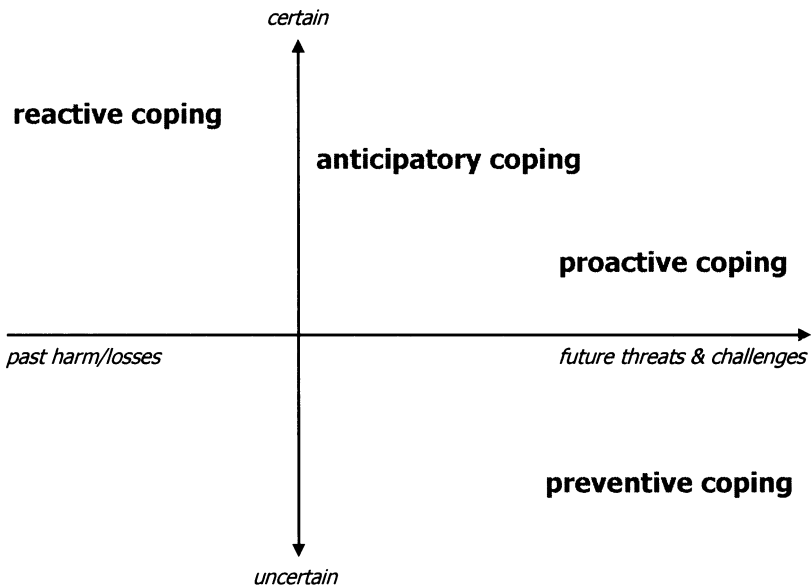


FIGURE 1. Four coping perspectives (Schwarzer, in press).

## Reactive Coping

Reactive coping can be defined as an effort to deal with a stressful encounter that has already happened or is still ongoing, with the aim to compensate for or to accept harm or loss. Loss events happened in the past with absolute certainty; thus, the individual who needs to cope has to either compensate for loss or alleviate harm. Another option is to readjust the goals or to search for meaning to reconstruct one's life. Reactive coping may be problem-focused, emotion-focused, or social-relation-focused. For coping with loss or harm, individuals have to be resilient. Since they aim at compensation or recovery, they need "recovery self-efficacy", a particular optimistic belief in their capability to overcome setbacks (Schwarzer, 1999).

## Anticipatory Coping

Anticipatory coping can be defined as an effort to deal with imminent threat. In anticipatory coping, individuals face a critical event that is certain to occur in the near future. Examples are speaking in public, a dentist appointment, a job interview, etc. There is a risk that the upcoming event may cause harm or loss later on, and the person has to manage this perceived risk. The situation is appraised as an imminent threat. The function of coping may lie in solving the actual problem at hand, such as increasing one's efforts, getting help, or investing other resources. Another function may lie in feeling good in spite of the risk, for example by redefining the situation as being less threatening, by distraction, or by gaining reassurance from others. Thus, anticipatory coping can also be understood as the management of known risks, which includes investing one's resources to prevent or combat the stressor. One of the resources is "specific coping self-efficacy", an optimistic belief of being able to cope successfully with the particular situation.

## Preventive Coping

Preventive coping can be defined as an effort to build up general resistance resources that result in less strain in the future (minimising severity of impact), less severe consequences of stress, should it occur, and less likely onset of stressful events in the first place. In preventive coping, individuals face a critical event that may or may not occur in the distant future. Examples are job loss, forced retirement, physical impairment, disaster, or poverty. The individual plans for the occurrence of such nonnormative life events that are appraised as a threat. Again, coping equals risk management, but here one has to manage various unknown risks in the distant future. The outlook creates anxiety, sufficient to stimulate a broad range of coping

behaviours. Since all kinds of harm or loss could materialise one day, the individual builds up general resistance resources, accumulating wealth, social bonds, and skills, “just in case”. Skill development is a major coping process that helps to prevent disadvantages. “General coping self-efficacy” is a prerequisite to plan and initiate successfully all kinds of preventive actions that help to build up resistance against threatening nonnormative life events in the distant future. Resource caravans (Hobfoll) move through the life course, and may represent a social backdrop of individual coping attempts.

## Proactive Coping

Proactive coping can be defined as an effort to build up general resources that facilitate promotion toward challenging goals and personal growth. In proactive coping, people have a vision. They see risks, demands, and opportunities in the far future, but they do not appraise these as threats, harm, or loss. Rather, they perceive difficult situations as challenges. Coping becomes goal management instead of risk management. Individuals are not reactive, but proactive in the sense that they initiate a constructive path of action and create opportunities for growth. The proactive individual strives for improvement of work or life and builds up resources that assure progress and quality of functioning. Proactively creating higher performance levels is experienced as an opportunity to render life meaningful or find purpose in life. Stress is interpreted as “eustress”, that is, productive arousal and vital energy.

Preventive and proactive coping are partly manifested in the same kinds of overt behaviours as skill development, resource accumulation, and long-term planning. However, the motivation can emanate either from threat appraisal or from challenge appraisal, which makes a difference. Worry levels are high in the former and low in the latter. Proactive individuals are motivated to meet challenges and commit themselves to personal quality standards. Self-regulatory goal management includes an ambitious manner of goal setting and tenacious goal pursuit. The latter requires “action self-efficacy”, an optimistic belief that one is capable of initiating and maintaining difficult courses of action. The role of beliefs in self-regulatory goal attainment has been spelled out in more detail in the Health Action Process Approach (Schwarzer, 1999).

The distinction between these four modes of coping is highly useful because it moves the focus away from mere responses to negative events toward a broader range of risk and goal management that includes the active creation of opportunities, the investment of objective resources, and the positive experience of stress. This is in line with Hobfoll’s COR theory and elaborates the time perspective of coping.



## CONCLUSION: THE NEW STANDARD IN THE FIELD?

Over the last twelve years, Stevan Hobfoll (1988, this issue) has stimulated and advanced stress and coping theory by pointing to context factors, cultural scripts, communal coping, and mechanisms of resource loss and gain. His ingenious writing is inspiring, and his empirical findings are persuasive. I endorse his position entirely, although I do not agree with his rejection of the Lazarus model. In contrast, I believe that Lazarus has provided us with a superb heuristic that has dominated psychology for three decades. But it is time to move on, and Hobfoll leads the way. I see his advances mainly as gradual extensions and brilliant improvements of prior work, not as a radical paradigm shift. He has upgraded transactional stress theory and developed distinct features that are in line with the Zeitgeist. This theory is certainly becoming the new standard in the field.

## REFERENCES

- Aspinwall, L.G., & Taylor, S.E. (1997). A stitch in time: Self-regulation and proactive coping. *Psychological Bulletin*, *121*, 417–436.
- Baltes, P.B. (1997). On the incomplete architecture of human ontogeny: Selection, optimization, and compensation as foundation of development theory. *American Psychologist*, *52*, 366–380.
- Hobfoll, S.E. (1988). *The ecology of stress*. New York: Hemisphere.
- Hobfoll, S.E. (1998). *Stress, culture, and community: The psychology and philosophy of stress*. New York: Plenum.
- Jerusalem, M., & Schwarzer, R. (1992). Self-efficacy as a resource factor in stress appraisal processes. In R. Schwarzer (Ed.), *Self-efficacy: Thought control of action* (pp. 195–213). Washington, DC: Hemisphere.
- Lazarus, R.S. (1966). *Psychological stress and the coping process*. New York: McGraw-Hill.
- Lazarus, R.S. (1991). *Emotion and adaptation*. London: Oxford University Press.
- Schwarzer, R. (1999). Self-regulatory processes in the adoption and maintenance of health behaviors. The role of optimism, goals, and threats. *Journal of Health Psychology*, *4*(2), 115–127.
- Schwarzer, R. (in press). Manage stress at work through preventive and proactive coping. In E.A. Locke (Ed.), *Basic principles of organizational behavior: A handbook*. Oxford: Blackwell.
- Schwarzer, R., & Schwarzer, C. (1996). A critical survey of coping instruments. In M. Zeidner & N.S. Endler (Eds.), *Handbook of coping: Theory, research and applications* (pp. 107–132). New York: Wiley.
- Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions. *Journal of Occupational Health Psychology*, *1*, 27–41.

## **A Rose By Any Other Name . . . : A Commentary on Hobfoll's Conservation of Resources Theory**

Murray S. Thompson\*

*University of Southern Queensland, Australia*

Cary L. Cooper

*University of Manchester Institute of Science and Technology, UK*

There can be no doubt that stress became a media buzzword of the latter half of the twentieth century within the Western world. It is not surprising, therefore, that since Selye popularised the term in the 1950s, the growth of theory and research bearing on the topic of stress has been exponential, and has shown no evidence of contracting as we have entered the new millennium. The foci of that theory and research have been demonstrably diverse. Consequently, as yet, there has emerged no unanimity of opinion as to an adequate definition of stress, let alone consensus as to an appropriate framework in which to establish its determinants. Some may shudder, therefore, at advocacy of yet another perspective on the stress process. Paradoxically, however, because it has the potential to arrest the fragmentation of contemporary conceptual and empirical analyses of the stress process, summary of a theory such as the Conservation of Resources (COR) by Hobfoll (this issue) is deserving of our serious consideration

Hobfoll (1998) expressly noted two personal biases inherent in his development of his COR theory. First, scientific theory should question existing paradigms, and, second, his belief in a fundamental connectedness, both social and biological, between human beings. Consequently, Hobfoll (this issue, p. 359) argues that the subjective component of stress, including the appraisal processes on which Lazarus's (1966, 1984) Stress and Coping paradigm are squarely based, has received undue emphasis in contemporary investigation of the experience of stress. While Hobfoll (this issue) grants a greater potency to appraisal processes as proximal determinants of the experience of stress than the constructs he advocates, we suggest that he

---

\* Address for correspondence: Department of Psychology, University of Southern Queensland, Toowoomba 4350, Australia. Email: Murray.Thompson@usq.edu.au

overestimates the extent to which empirical research has systematically assessed the transactional roles of primary and secondary appraisal and reappraisal in the stress process which Lazarus suggests. In our own and others' estimation, the bulk of published research that has ostensibly drawn on the general principles of Lazarus's transactional model of stress has, in fact, maintained a more limited focus on the relationship between modes of behavioural responding (coping strategies) to situations harbouring extant threat.

A third and related bias that Hobfoll (1998, p. ix) further acknowledges is a yearning to establish the "objective" circumstances of people's "real" experience of stress. Such ambitions are likely to resonate with others who have long been disillusioned by the proliferation of transactional models of human distress that emerged on the shirt-tails of the cognitive revolution in psychology (e.g. Dohrenwend, Dohrenwend, Dodson, & Shrout, 1984). It is ironic, however, that Hobfoll should choose to cite an author whom we have seen as an unabashed (cultural) relativist, such as Geertz, to argue that appraisals are secondary to socio-cultural influences, in his attempt to objectify the notion of resources. His occasional citations of research seeking to establish the biological and neurophysiological substrates of (traumatic) stress will strike a chord with others (e.g. Hurrell, Nelson, & Simmons, 1998) who continue to express despair at the relative failure of contemporary research to attend to physiological dimensions of stress that were earlier emphasised by Selye and other progenitors within the field.

## SEMANTIC AND DEFINITIONAL ISSUES

As to the specifics of Hobfoll's exposition of his COR theory, we are disquieted by Hobfoll's (this issue) explication of the construct of resource. He expressly states that his definition of the construct attempts "to avoid the slippery slope of devaluing resources until everything that is good is a resource" (Hobfoll, this issue, p. 360). However, we wonder what substantive positive circumstances have been left out of his definition of a resource. Hobfoll's (this issue) definition refers to: "objects, personal characteristics, conditions, or energies that are valued in their own right, or that are valued because they act as conduits to the achievement or protection of valued resources" (p. 339). Given such a definition, we are also led to wonder how one can adequately differentiate resources from what have more conventionally been understood as hierarchies of (sub-)goals and goal attainment as offered by cognitively-based models of human striving (e.g. Carver & Scheier, 1998; Latham & Locke, 1991). Some comparability with existing frameworks is arguably a greater asset of a theory than incompatibility with existing frameworks if an accommodation between theories is sought. Indeed, Hobfoll (this issue) does appear keen to show that his COR theory

is, at some levels of analysis, compatible with some aspects of appraisal-based theories of stress with which he finds general fault.

Herein lies a special attraction of COR theory. Even though it introduces new terms and reconceptualisation of some contemporary constructs, COR theory sits comfortably with a variety of pre-existing models of human distress. On the down side, however, if one is to seriously engage COR theory, there is the necessity to become familiar with the terminology employed to spell out yet another taxonomy of modes of coping (see Hobfoll, this issue, p. 361). It is prudent, therefore, to establish whether COR theory entails something more than a semantic relabelling of constructs already described by pre-existing models.

In this regard, Hofoll's (this issue) exposition of COR theory certainly exhibits some semantic inconsistencies. He states, for example, "this has been shown for single resources such as . . . optimism" (Hobfoll, this issue, p. 349) but had earlier argued the relative potency of the influence of resources on human distress and in mobilisation of coping resources by stating, in part, "loss of resources was a better predictor of general distress than optimism-pessimism" (p. 346). The former statement unambiguously defines optimism as a resource whereas, to our minds, the latter statement seems to both differentiate the constructs of "optimism" and "resource" and when interpreted in the light of subsequent sentences, to contrast their influence on the stress process. No doubt, a picky observation, but one that underscores the centrality of semantics in assessing the potential of COR theory to effect revolutionary reconceptualisation of and/or integration with contemporary understandings of stress.

We can assert that Hobfoll has met his self-expressed aim that COR theory occasions some questioning of existing frameworks. Consideration of his COR theory has prompted some serious contemplation of our own theoretical assumptions, if not, initially, some defensiveness regarding those assumptions. Hobfoll acknowledges that he has appraisal processes in his sights as deserving of special questioning, as noted above. To build his case he notes that renewed interest in unconscious process in psychology heralded by authors such as Bargh and Chartrand (1999, see also Kilstrom, 1999) undercuts the presumed potency of appraisals to the experience assumed by cognitive researchers. If important beliefs, attitudes, perceptions, and goals that research participants maintain with regard to a stressor(s) are implicit (outside of awareness), as the authors immediately above suggest, then the research paradigms of cognitivist researchers that rely on self-report data, are seriously jeopardised. Yet, it also seems that Hobfoll (this issue) seeks a theoretical rapprochement "in no situation should we either ignore subjective, socio-cultural, or objective elements of resource change" (p. 359) and thus signifies a pragmatic, personal commitment to theoretical and/or methodological pluralism.

However readers may value his biases, Hobfoll (this issue) can rest assured that his COR has richly spawned a (to use a word) reappraisal of the constructs that have been employed in research, to date. The beguiling simplicity and catchiness of the term “resource”, which accord with the conceptual breadth has given to the construct, here and elsewhere, have assured the degree of attention and acceptance the construct has attracted, which he has ably demonstrated in his current, brief review.

### COR AND TRAUMA

It is, perhaps, no surprise that Hobfoll draws on research related to the psychological sequelae of traumatic events to assemble support for the resource construct. Alone, among the many disorders defined in the fourth edition of the *Diagnostic and Statistical Manual of the Mental Disorders* (DSM-IV; American Psychiatric Association [APA], 1994), a cause is explicitly offered for Posttraumatic Stress Disorder (PTSD), which is couched, in part, in terms of objective features of environmental events. This circumstance arose, even though the APA task force which drew up the diagnosis of PTSD had been given a charter to avoid implying any particular aetiology for any disorder. It should be noted, however, that individual appraisals are also part of a definition of which circumstances constitute “traumatic” events, and many diagnosticians and therapists emphasise various subjective elements of trauma.

As is well known, inclusion of PTSD as a nosological entity with the classification system occurred as a result of the recognition by clinicians of severe difficulties experienced by Vietnam veterans in their adjustment to civilian life. A variety of cognitive-behavioural techniques are employed to ameliorate more disturbing symptoms of PTSD which rest, in large measure, on assisting clients to reframe the individual’s appraisal of exposure to traumatic events which they have identified as personally salient. Conventional clinical wisdom declares that there are few objective determinants of PTSD; that is, that individual appraisal mediates the influence of exposure to potentially traumatic events on individual experience. Logically, therefore, strong inter-individual differences are expected (and found) in human response to exposure to particular events that are, for all practical purposes, objectively identical. Thus, cognitive-behavioural researchers and therapists are adamant that the human response to trauma is idiographic. In keeping with COR theory, however, there are many who have proffered extant social circumstances on veterans’ return to civilian life, such as experience of low levels of social support, social ostracisation, and even vilification, as core causes of PTSD in Vietnam veterans.

Individual differences in longer-term social adaptation to childhood abuse are also widely acknowledged. Nonetheless, researchers and therapists report

that individuals who evidence problematic patterns of adjustment and/or symptoms associated with clinical syndromes, which have inappropriate social interaction as central features, such as borderline personality disorder (e.g. Briere & Gil, 1998), as well as symptoms of combat-related PTSD (e.g. King, King, & Foy, 1996) have a high probability of having been victims of childhood abuse. Moreover, as alluded to by Hobfoll, the physical well-being of individuals who have experienced repeated or serial exposure to traumatic events, has been shown to be more seriously jeopardised, as compared to the health status of individuals who have experienced no or limited exposure to traumatic events (e.g. van der Kolk, Burbridge, Fisler, & Kradin, 1999).

Hobfoll (this issue) notes that the primary applied concern of his COR theory is assessment of the objective characteristics of stress-evoking circumstances. He is certainly not alone in this view. Organisational theorists such as Spector (1992) have long despaired at the necessary reliance on self-report data when employing appraisal models to guide research. Moreover, in keeping with earlier theorists in the area of occupational stress (e.g. Havlovic & Keenan, 1991), Hobfoll (this issue) argues that to exclusively cast the experience of stress in terms of dysfunctional appraisal risks blaming the victim. Hobfoll (this issue) also suggests that common cultural interpretations of stressful circumstances should be more widely acknowledged. These applied considerations assume particular weight when one acknowledges various estimates that our world contains somewhere between 23 and 28 million refugees, many of whom have been exposed to both gross and grotesque levels of international-, community-, and family-initiated violence. Judging from past disasters, it is likely that a minority of these individuals will evidence clinical levels of symptoms such as PTSD in the longer term. Yet, it seems that the scale of this worldwide problem shows every indication of growing, rather than abating. Therefore, the applied benefits of seeking to reduce the likelihood of life-long psychic misery that is wrought by such traumatic stress, on even a minority of these many millions of people, through application of interventions suggested by appraisal modes of stress, are severely circumscribed.

Appraisal is an undoubted powerful proximal influence on experience of debilitating levels of stress, including PTSD, even for Hobfoll. Taken together, however, the insights and findings summarised immediately above give direct or indirect support to several propositions of Hobfoll's COR theory. Specifically, resource loss is especially influential in human adjustment; those with a greater reservoir of resources are less vulnerable to resource loss, and individuals can become caught up in spirals of ongoing resource loss or negative caravans. But having said that, there remains a responsibility to assess the distinctive and/or innovative characteristics of COR theory.

## COMPATIBILITY OF COR AND OTHER MODELS OF HUMAN DISTRESS

The above principles of COR theory echo the assertions of other models of negative affective states other than stress, notably depression, that are labelled social ecological (see Coyne, 1982). Given his self-expressed, theoretical biases, it is understandable that the conceptualisation of stress cited by Hobfoll (this issue, p. 339) as the basis of development of COR theory should be a definition of the phenomenon of an author who has emphasised social situational determinants of human behaviour. Nonetheless, that definition implies the construct of (actual-ideal) discrepancies which have been central to development of various self-regulatory models of human distress models.

Three self-regulatory models that have attracted and continue to attract attention in the contemporary literature of applied psychology are those of Carver and Scheier (1998), Pyszczynski and Greenberg (1992), and Wells and Matthews (1996). Like Hobfoll each of these theorists offers a “top-down” model of the determinants of human distress. Unlike COR theory, these models are essentially cognitive but draw attention to processes that have an uncanny similarity to those highlighted by Hobfoll’s COR theory. As is to be expected, there is some divergence in the conceptual detail of the three self-regulatory models of human distress identified above. There are, however, common elements between the models.

Common elements either explicitly or implicitly suggested by the three self-regulatory models of human distress include: (actual-ideal) discrepancies, self-focus, optimism, and disengagement from attempts to resolve personal difficulties. The comparability of the construct of discrepancy to Hobfoll’s chosen conceptualisation of stress has been noted. The resemblance of the notion of discrepancy to the central plank of COR theory of resource loss is obvious, but deserves further brief comment. As with COR theory, in their schematic representation of their (self-regulatory preservation) model of depression Pyszczynski and Greenberg (1992, p. 78) indicate that a central loss to a person can all too often be a catalyst to a cascading or spiralling system of negative affect. The notion of self-focus, which is referred to in the model of Wells and Matthews (1996) as the Self-Regulatory Executive Function (S-REF), in which worry is a typical component, has no direct equivalents in COR theory. However, Hobfoll explicitly identifies optimism as a resource, even if other semantic difficulties cast some doubt on the status of optimism within his COR theory. Although they proffer constructs different from the notion of preservation of resources offered by Hobfoll (this issue) to account for the phenomenon, like COR theory, each of the three self-regulatory models sees passive disengagement as the defining dysfunctional outcome of ineffectual coping, described by Hobfoll

(this issue) as “failure to gain sufficient resources following significant resource investment” (p. 342).

The three self-regulatory models attempt to identify the cognitive cause or concomitants of human distress; an aim which Hobfoll implies is, at best, myopic. There has been, however, little timidity on the part of some of the developers of these self-regulatory models of human distress in expressing the generality of the processes identified. Wells and Matthews (1996) state, for example, that their S-REF model enhances explanation of “. . . a variety of indices of emotional distress; symptoms of clinical affective disorder, sub-clinical stress symptoms, and attentional bias demonstrated through task performance” (p. 887). Having as its basic tenet that “individuals strive to obtain, retain, protect, and foster those things that they value” (p. 8), and aims that are more inclusive than any of the three self-regulatory models discussed, it is inevitable that the COR theory will have parallels with elements of more limited theories nested within its broad explanatory devices.

It is also interesting that with no apparent guidance/inspiration from the COR theory of Hobfoll, other investigators of human self-regulatory processes, who previously relied exclusively on the notion of self-regulatory strength to interpret their findings, have more recently sprung to the broader applicability of the resource construct to explain self-regulatory failures. In relying on the analogy of a muscle to explain the typical decrement in self-regulation that results from individuals' repeated attempts at self-control, Muraven and Baumeister (2000) note “controlling one's own behaviour requires the expenditure of some inner, limited *resource* that is depleted afterwards” (italics ours, p. 247). Such independent adoption of the resource construct provides substantial support for the thrust of the COR theory and bodes well for application of the construct beyond the explanation of the stress process.

## EXTENDING COR TO INTERVENTION IN STRESS

Even accepting that much human conflict emerges from access to resources, no one would realistically expect COR theory to provide a fully articulated solution to the reduction of worldwide experience of stress and trauma, whether natural or man made. We note parenthetically that the recent review of the topic by Csikszentmihalyi (1999) confirms, as well, the suspicion of many of us living our affluent Western lifestyles that even a monumental surfeit of material resources is no guarantee of happiness. Though COR theory does not provide a complete guide to the eradication of trauma from the lives of humans nor the pursuit of human happiness, the notion of resource does offer benefits for more modest programmes of stress management. There is a rich diversity of appraisal-based approaches to stress management. COR theory is so at odds with the premises of many



cognitive paradigms as to defy assimilation, but clear opportunities exist to accommodate the resource perspective to the thrust of others, as attested to by more recent developments in self-regulatory theory, noted above.

Self-regulation is an explicit goal of many cognitive interventions, including those suggested by D’Zurilla (1986) and Nezu (Nezu, Nezu, & Perri, 1989) which expressly rely on the tenets of Lazarus’s Stress and Coping Paradigm to develop a programme of stress management labelled Problem Solving Training (Therapy). While Hobfoll’s COR theory has recast Lazarus’s paradigm in terms of resource loss and restitution, D’Zurilla and Nezu have, instead, invoked the notion of problem to give a readily grasped heuristic to the stress process. Nonetheless, the framework of problem solving training is steadfastly cognitive-behavioural. The recommended elements of problem solving training parallel the ingredients of double-loop learning advocated by action researchers such as Argyris and his colleague (e.g. Argyris & Schon, 1996) and (group) problem solving training encourages reflection on the part of participants, no less than do advocates of (participatory) action research.

To risk labouring the point, problem solving training is, or could not be anything else but, a cognitive intervention—its fundamental lesson is “stop and think”. Yet, problem solving training has principles in common with COR theory, just as COR theory subsumes aspects of appraisal models of stress. For example, in the Problem Formulation component of the programme, participants are encouraged to actively identify “the facts” of an identified problem. Indeed, much of the active participation in problem solving training involves establishing the who, what, where, why, and how of problems participants identify. In the Decision Making component participants are encouraged to exhaustively establish both the environmental affordances and obstacles that pertain to varying courses of problem resolution which they have identified: that is, to seriously consider the costs and benefits of options for prospective resolution of their identified problem(s). Thus, problem solving training attempts to sharpen participants’ focus on extant environmental circumstances and encourage assessments of what can be usefully described as their current resources, and any losses and gains of resources likely to result from particular courses of action. Experience suggests, especially when conducted with occupational groups, that the term “resource” frequently springs from the mouths of participants, as they struggle to make the assessments, judgments, and action plans that problem solving training seeks to foster.

It can be seen, therefore, that the nomenclature of COR theory, if not its conceptual principles, provides a useful complement and addition to parallel concerns with appraisal processes in problem solving training. In his advocacy of COR theory, Hobfoll nonetheless finds particular fault with cognitive restructuring as a strategy of coping with adversity. He also seeks

to establish cognitive restructuring as an exemplar of the types of strategies of coping suggested by appraisal-based models of stress. While Lazarus and Folkman (1984) have explicitly identified a range of coping strategies other than cognitive restructuring, including seeking social support, they were also careful to acknowledge that all strategies of coping have costs and benefits, and that in a complicated world there can be no sure fire strategies of coping.

### OPPORTUNITIES FOR THEORETICAL COALESCENCE

In our opinion, Hobfoll (this issue) overplays the idiographic character of appraisals, perhaps as a rhetorical device to persuade readers of the competing virtues his COR theory. In practice, cognitive researchers do not operationalise pertinent appraisals (beliefs, attributions, and schema) in limitless ways, and many acknowledge that (sub-)cultural influences can influence an individual's cognitions. Nonetheless, those with a long and venerated history in the discipline of psychology have noted that if there is to be steady progress in a field, we can ill afford sacred cows (see for example Epstein, 1997) and Hobfoll has given the straw man of appraisal a good going over. From his words in the lead article, Hobfoll does not, however, seem inspired to achieve the dominance that appraisal-based theories currently hold.

So what is the ground on which coalescence can occur? There appears to be a growing recognition that human adaptation relies on at least two separate but co-acting modes of thinking and/or responding; one that is impulsive and intuitive and another that is ponderous and rational, that could also be characterised, for the sake of argument here, as subjective and objective, respectively. Epstein (1994, 1997) has labelled these dichotomous modes as experiential-rational, while Metcalfe and Mischel (1999) differentiate hot and cool systems. There is some divergence between the two models identified immediately above, but the experiential/hot mode is a "go" system that is holistic, rapid, and reflexive while the rational/cool mode is a "know" system that is logical, ponderous, and reflective. According to Metcalfe and Mischel the go system is attenuated by stress and the know system is accentuated by stress. Epstein argues that the experiential(/hot) mode is manifest in much of our daily adjustment and operates largely without awareness, whereas the rational(/cool) mode is called upon when there is an explicit requirement to engage the extant environment so as to sustain or enhance personal well-being. Thus, when Hobfoll casts appraisal as a proximal determinant of stress and coping and (perceived loss of) resources as distal precursors to the stress process, he could be seen to be implicitly invoking the distinctions suggested by Epstein (1994) and Metcalfe and Mischel (1999).

## CONCLUSIONS

We see great potential in Hobfoll's COR theory to broaden and so enhance contemporary understanding of stress and coping, yet feel there is some urgency in finding an accommodation between appraisal- and resource-based conceptions of the stress process. Because, in our opinion, the theory accords so well with common sense, we think its strengths should not be sacrificed nor left to stand in opposition to conventional wisdom regarding the completeness of appraisal-based theories. In short, we agree with Hobfoll's conclusion that COR theory provides an additional heuristic for teasing out remaining questions regarding the stress process. We have described a specific instance in which the COR theory could enhance an established intervention. It is hoped, therefore, that Hobfoll does not lose his apparent recognition of some strengths of the cognitive paradigm and will continue to be a force in building conceptual bridges between the two models.

The degree to which the principles of COR have already been incorporated into conceptual and empirical analyses of stress-related issues suggest that it is around to stay. However, if sporadic jousts between advocates of physiological and psychological models to attain an equal footing, if not dominance of researchers' thinking about stress is any judge, initial integration of resource- and appraisal-based models is likely to be brittle and, probably, remain no more than pragmatic. Some philosophers of science tell us the paradigm clashes are politically rather than empirically centred, and their resolution largely "irrational", or at least irresolvable with reference to (specific) data. But such consideration should not dissuade the more innovative and courageous among us, like Hobfoll, from the risky and exhausting business of bringing new ideas before the gaze of our colleagues.

## REFERENCES

- American Psychiatric Association (1994). *Diagnostic and statistical manual of the mental disorders* (4th edn.). Washington, DC: Author.
- Argyris, C., & Schon, D.A. (1996). *Organizational learning II: Theory, method, and practice*. Reading, MA: Addison-Wesley.
- Bargh, J.A., & Chartrand, T.L. (1999). The unbearable automaticity of being. *American Psychologist*, 54, 462–479.
- Briere, J., & Gil, E. (1998). Self-mutilation in clinical and general population samples. *American Journal of Orthopsychiatry*, 68, 609–620.
- Carver, C.S., & Scheier, M.F. (1998). *On the self-regulation of behavior*. Cambridge and New York: Cambridge University Press.
- Coyne, J.C. (1982). A critique of cognitions as causal entities with particular reference to depression. *Cognitive Therapy and Research*, 6, 3–13.
- Csikszentmihalyi, M. (1999). If we are so rich, why aren't we happy? *American Psychologist*, 54, 821–827.

- Dohrenwend, B.S., Dohrenwend, B.P., Dodson, M., & ShROUT, P.E. (1984). Symptoms, hassles, social supports, and life events: Problem of confounded measures. *Journal of Abnormal Psychology, 93*, 222–230.
- D’Zurilla, T.J. (1986). *Problem solving therapy: A social competence approach to clinical intervention*. New York: Springer.
- Epstein, S. (1994). Integration of the cognitive and the psychodynamic unconscious. *American Psychologist, 49*, 709–724.
- Epstein, S. (1997). This I have learned from 40 years of personality research. *Journal of Personality, 65*, 3–32.
- Havlovic, S.J., & Keenan, J.P. (1991). Coping with work stress: The influence of individual differences. *Journal of Social Behavior and Personality, 6*, 199–212.
- Hobfoll S.E. (1998). *Stress, culture, and community*. New York: Plenum.
- Hobfoll, S.E. (this issue). The influence of culture, community, and the nested-self in the stress process: Advancing Conservation of Resources theory, *Applied Psychology: An International Review, 50* (3), 337–370.
- Hurrell, J. Jr, Nelson, D.L., & Simmons, B.L. (1998). Measuring job stressors and strains: Where we have been, where we are, and where we need to go. *Journal of Occupational Health Psychology, 3*, 368–389.
- Kilstrom, J.F. (1999). Rediscovery of the unconscious. F.J. McGuigan lecture on Understanding the Human Mind, presented at Annual Meeting of American Psychological Association, Boston, August.
- King, D., King, L.A., & Foy, D.W. (1996). Prewar factors in combat-related posttraumatic stress disorder: Structural equation modeling with a national sample of female and male Vietnam veterans. *Journal of Consulting and Clinical Psychology, 64*, 520–536.
- Latham, G.P., & Locke, E.A. (1991). Self-regulation through goal setting. *Organizational Behavior and Human Decision Processes, 50*, 212–247.
- Lazarus, R. (1966). *Psychological stress and the coping process*. New York: McGraw-Hill.
- Lazarus, R.S. (1984). The primacy of cognition. *American Psychologist, 39*, 124–129.
- Lazarus, R.S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Metcalf, J., & Mischel, W. (1999). A hot/cool system analysis of gratification: Dynamics of willpower. *Psychological Review, 106*, 3–19.
- Muraven, M., & Baumeister, R.F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle? *Psychological Bulletin, 126*, 247–259.
- Nezu, A.M., Nezu, C., & Perri, M.G. (1989). *Problem solving therapy for depression: Theory, research, and clinical guidelines*. New York: Wiley.
- Pyszczynski, T., & Greenberg, J. (1992). *Hanging on and letting go: Understanding the onset, maintenance, and remission of depression*. New York: Springer Verlag.
- Spector, P.E. (1992). A consideration of the validity and meaning of self-report measures of job conditions. In C.L. Cooper & I.T. Robertson (Eds.), *International review of industrial and organizational psychology* (pp. 123–151). Cichester: Wiley.
- Van der Kolk, B., Burbridge, J., Fisler, R., & Kradin, R. (1999). Phenotypes of blood lymphocytes suggest chronic immune activation. *Psychosomatics, 40*, 222–225.
- Wells, A., & Matthews, G. (1996). Modelling cognition in emotional disorder. The S-REF model. *Behaviour Research and Therapy, 34*, 881–888.